

SEPTEMBER 7, 1953

Moving 27,000 Boys by Train ... p. 84

# RAILWAY AGE

The Standard Railroad WEEKLY for Almost a Century

SEP 22 1953

This month Dr. Oscar Horger demonstrates that wide area contact is one reason why:

The taper makes TIMKEN® the only journal bearing that delivers what you expect when you buy a roller bearing

TAPER AND WIDE  
AREA CONTACT KEEP  
ROLLERS IN POSITIVE  
ALIGNMENT.

**Y**OU put roller bearings on railroad journals to prevent hot boxes and cut costs. Other advantages are less important. The Timken® tapered roller bearing is the *one* bearing you can count on to end the hot box problem and reduce costs. Here's why:

1) *Positive roller alignment.* The taper holds roller ends snug against the rib, where wide area contact keeps rollers properly aligned. There's no skewing of rollers to upset the full line contact.

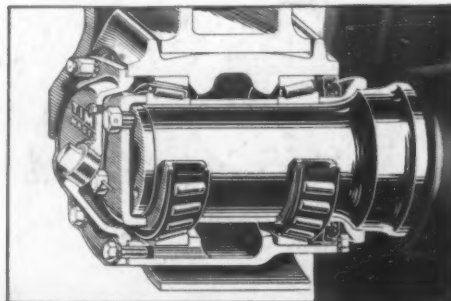
2) *No lateral movement within the bearing.* In straight roller bearings, free lateral movement pumps lubricant through the seal and out of the journal box, draws dirt and water in. Free lateral movement also can cause scuffing of rollers and races, shorten bearing life. And it makes auxiliary devices necessary to carry thrust. These are hard to lubricate, require extra maintenance. In Timken bearings, the taper prevents free lateral movement, permits them to take thrust loads. There's no pumping action, no scuffing.

Get what you pay for when you switch to roller bearings to end hot boxes and cut costs. Get Timken *tapered* roller bearings. The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "TIMROSCO".

THE TAPER MAKES **TIMKEN** THE BEARING YOU TRUST

TRADE-MARK REG. U. S. PAT. OFF.

NOT JUST A BALL ○ NOT JUST A ROLLER □ THE TIMKEN TAPERED ROLLER □ BEARING TAKES RADIAL ○ AND THRUST —○— LOADS OR ANY COMBINATION ✱



# SUSQUEHANNA'S RDC's ARE TEXACO- LUBRICATED



NEW YORK ★ CHICAGO

SAN FRANCISCO

ST. PAUL ST. LOUIS

ATLANTA

**NEW YORK, SUSQUEHANNA AND WESTERN** is one of the first Class 1 railroads in the East to be completely Dieselized — and one of the *first* to adopt Railway Diesel Cars to build local passenger traffic. In Susquehanna's popular Speedliner service between New York City and Paterson, N.J., for example, these Budd-built RDC's are surpassing expectations.

Susquehanna's selection of Texaco to lubricate its RDC's is only natural — the logical result of long years of ex-

perience with the outstandingly dependable performance that comes from 100% use of Texaco Railroad Lubricants.

Find out how Texaco can help you get the most from your RDC's and other equipment. There's a special Texaco RDC Lubrication Chart that will gladly be sent on request. Just call the nearest Railway Sales Office listed, or write: The Texas Company, *Railway Sales Department*, 135 East 42nd Street, New York 17, N. Y.



**TEXACO** Railroad Lubricants  
AND SYSTEMATIC ENGINEERING SERVICE

IN ALL  
48 STATES



# Here's the Way to Prevent Rock Slides



Installation of Bethlehem Rock Anchor Bolts above railway tunnel. The anchor bolts, used with square-plate washers, stabilize the rock formation, preventing falls of rock to track below.



You know from experience the havoc and monetary loss which can be caused by rock slides along rights-of-way. But today many dangerous locations can be made free from such troubles by using Bethlehem Rock Anchor Bolts to stabilize the rock formation.

Bethlehem Rock Anchor Bolts anchor layers of rock or individual boulders to bedrock, preventing them from sliding or rolling. They are ideal for use in cuts with high banks, or on steep hillsides, and are highly effective where the formations which they anchor in turn support adjacent or overlying strata.

Bethlehem Rock Anchor Bolts are 29/32 in. in diameter, and come in lengths of from 2 ft to 10 ft. One end of the bolt has 5 in. of 1-in. rolled threads. The opposite end has a 6-in. slot, made by an exclusive forging process which forms the

equivalent of two half-rounds. The slot accommodates a wedge, which is forced deep into the slot when the back of the hole is reached.

The bolts are furnished with an American Standard square nut. They can be installed horizontally or at an angle, and can be used in combination with rock anchor ties, plate washers, and angle washers.

Bethlehem Rock Anchor Bolts are worth looking into. Why not try them out on one of your most dangerous locations? We'll be glad to work out the details with you, whenever you say.

BETHLEHEM STEEL COMPANY  
BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. Export Distributor: Bethlehem Steel Export Corporation



## BETHLEHEM ROCK ANCHOR BOLTS

# Wayside operators and train crews communicate quickly using the new "UNION" I.T.C. Equipment

New "UNION" Single-Channel Two-Way Inductive Train Communication Equipment provides fast, sure *voice* communication between wayside stations and trains, between trains, and between cabs and cabooses. It saves time in transmitting information and promotes better train operation.

## COMPACT, CONVENIENT EQUIPMENT

It's easy to find room for this equipment. The wayside equipment box is about 27 in. high, 30 in. wide, and 14 in. deep. Designed for easy maintenance and testing, the box, which is wall mounted, swings open for access to the wiring. The receiver, transmitter, power pack and line coupler are individual units, rack mounted and making electrical connections through spring mounted pre-loaded and pre-aligned contacts. A sturdy sheet metal cover protects the equipment.

Complete information is available from any of our District Offices.

## UNION SWITCH & SIGNAL

DIVISION OF WESTINGHOUSE AIR BRAKE COMPANY



NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

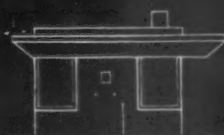
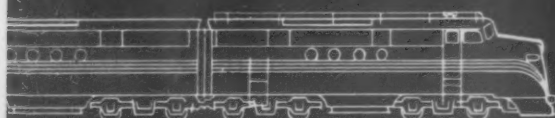


The "UNION" I.T.C. control station takes very little space at a wayside station. And it has the controlled circuits that permit constant use of the receiver's control and dial phone for messages wanted into the line.



Individual units are subject to the same maintenance conditions. Shown in the Receiver.

The wayside equipment box, with sturdy sheet metal cover removed, to show the orderly arrangement of the parts.





TF1  
R2

# RAILWAY AGE

PUBLISHED WEEKLY BY THE SIMMONS-BOARDMAN PUBLISHING CORPORATION AT ORANGE, CONN., AND ENTERED AS SECOND CLASS MATTER AT ORANGE, CONN. UNDER THE ACT OF MARCH 3, 1879. NAME REGISTERED IN U. S. PATENT OFFICE AND TRADE MARK OFFICE IN CANADA. EDITORIAL AND EXECUTIVE OFFICES AT 30 CHURCH STREET, NEW YORK 7, N. Y., AND 79 WEST MONROE STREET, CHICAGO 3, ILL. BRANCH OFFICES: 1081 NATIONAL PRESS BUILDING, WASHINGTON 4, D. C.—TERMINAL TOWER, CLEVELAND 13, OHIO—TERMINAL SALES BUILDING, PORTLAND 5, ORE.—1127 WILSHIRE BOULEVARD, LOS ANGELES 17, CAL.—244 CALIFORNIA STREET, SAN FRANCISCO 11, CAL.—2909 MAPLE AVENUE, DALLAS 4, TEX.

EDITOR.....James G. Lyne  
EDITORIAL CONSULTANT.....Samuel O. Dunn  
EXECUTIVE EDITOR.....William H. Schmidt, Jr.  
MANAGING EDITOR.....C. B. Tavenner  
NEWS & FINANCIAL EDITOR.....

Gardner C. Hudson  
WASHINGTON OFFICE.....

Walter J. Taft Joe W. Kizzia  
TRAFFIC & TRANSPORTATION DEPARTMENT  
Robert G. Lewis John W. Milliken  
John S. Gallagher, Jr.

MECHANICAL DEPARTMENT.....  
C. B. Peck E. L. Woodward

H. C. Wilcox C. L. Combes G. J. Weihofen  
ELECTRICAL DEPARTMENT.....Alfred G. Oehler  
ENGINEERING DEPARTMENT.....

M. H. Dick Radford E. Dove  
Ralph M. Schmidl

PURCHASES & EQUIPMENT.....Fred C. Miles  
SIGNALING & COMMUNICATIONS DEPARTMENT

John H. Dunn Robert W. McKnight  
WESTERN NEWS DEPARTMENT.....A. M. Cox, Jr.

WEST COAST NEWS.....T. D. MacMullen  
ASSOCIATE EDITOR.....Charles Layng

LIBRARIAN.....Edith C. Stone  
EDITORIAL ASSISTANT.....Frederick E. Colwill



SUBSCRIPTION PRICE TO RAILROAD EMPLOYEES ONLY IN U. S., U. S. POSSESSIONS, CANADA AND MEXICO, \$4 ONE YEAR, \$6 TWO YEARS, PAYABLE IN ADVANCE AND POSTAGE FREE. SUBSCRIPTION PRICE TO RAILROAD EMPLOYEES ELSEWHERE IN THE WESTERN HEMISPHERE, \$10 A YEAR; IN OTHER COUNTRIES, \$15 A YEAR—TWO-YEAR SUBSCRIPTIONS DOUBLE THE ONE-YEAR RATE. SINGLE COPIES 50c, EXCEPT SPECIAL ISSUES \$1. ADDRESS CORRESPONDENCE CONCERNING SUBSCRIPTIONS TO ROBERT G. LEWIS, ASSISTANT TO PRESIDENT, 30 CHURCH STREET, NEW YORK 7.



SIMMONS-BOARDMAN PUBLISHING CORPORATION: JAMES G. LYNE, PRESIDENT. SAMUEL O. DUNN, CHAIRMAN EMERITUS. J. S. CRANE, VICE-PRESIDENT AND SECRETARY. C. MILES BURPEE, HARRY H. MELVILLE, C. W. MERRIKEN, JOHN R. THOMPSON, WILLIAM H. SCHMIDT, JR., J. S. VREELAND, FRED W. SMITH, VICE-PRESIDENTS. ROBERT G. LEWIS, ASSISTANT TO PRESIDENT. ARTHUR J. MCGINNIS, EXECUTIVE VICE-PRESIDENT AND TREASURER, RALPH E. WESTERMAN, ASSISTANT TREASURER.

September 7, 1953

Vol. 135, No. 10

## Week at a Glance

**Highways superimposed on railroad lines would cost less than new surface locations, especially in urban areas, and would be advantageous to highway users generally, according to Ford Motor Company's George J. Crimmins.** 11

**Higher refrigeration charges are sought by the railroads in a petition filed with the I.C.C. which proposes to put this service back on a remunerative basis by raising the tariff charges about 32 per cent.** 13

**Equipment orders for 8 months of 1953 as reported by *Railway Age* (U.S. only) total \$152 million for diesels, \$112 million for freight cars, and \$29 million for passenger cars.** 18

**New product news this week is slanted to the special interests of the railroads' engineering and maintenance officers, many of whom are assembling at Chicago in a few days for the annual conventions of the Roadmasters and Bridge & Building Associations.** 67

### RAILWAY AGE FORUM

**Managerial skill is something that's hard to come by, and he would be a venturesome individual who would get up on his hind legs and assert that the railroads have all they need at their disposal. The question is, are the railroads doing their very utmost in lining up potential executive material and in developing fully the talents they already have enlisted?** 79

**Community consciousness of railroad service and railroad problems is the foundation of good railroad public relations. One example of how this works out in practice is discussed this week.** 80

**"Selective rate cutting" is all right when the truckers do it but absolutely horrible below-the-belt tactics when**



**MORE RAILROADS choose**

**Hyatts for freight... 1765 cars**

**to serve America better!**

Here's the record: During the past year, *eight* major railroads have ordered Hyatt-equipped freight cars! Once again, the railroads have shown that they're always alert to modernization—always ready to adopt a superior product if it will help them to provide more efficient transportation. And the superiority of Hyatt Roller Bearings (replacing old-style, friction-type bearings) *has* been proved—by years of excellent service on passenger cars and diesel locomotives! Now available for freight cars, Hyatts *eliminate the hot box problem*, and they mean smoother starts and higher running speeds—with less damage to merchandise and important savings in maintenance costs! When you think of railroad progress, think of HYATT—Running Mate of Diesel Freight!

**HYATT ROLLER BEARING JOURNAL BOXES**

HYATT BEARINGS DIVISION • GENERAL MOTORS CORP. • HARRISON, N. J.



## Current Statistics

Operating revenues, six months	
1953 .....	\$ 5,327,188,193
1952 .....	5,120,547,684
Operating expenses, six months	
1953 .....	\$ 4,022,851,781
1952 .....	4,000,589,650
Taxes, six months	
1953 .....	\$ 642,481,080
1952 .....	591,867,018
Net railway operating income, six months	
1953 .....	\$ 548,696,771
1952 .....	442,563,173
Net income, estimated, six months	
1953 .....	\$ 418,000,000
1952 .....	310,000,000
Average price railroad stocks	
September 1, 1953 .....	59.12
September 2, 1952 .....	64.66
Car loadings revenue freight	
Thirty-four weeks, 1953 ....	25,096,352
Thirty-four weeks, 1952 ....	23,926,702
Average daily freight car surplus	
August 29, 1953 .....	14,397
August 30, 1952 .....	21,149
Average daily freight car shortage	
August 29, 1953 .....	3,406
August 30, 1952 .....	5,829
Freight cars delivered	
July 1953 .....	6,370
July 1952 .....	5,402
Freight cars on order	
August 1, 1953 .....	47,423
August 1, 1952 .....	95,265
Freight cars held for repairs	
August 1, 1953 .....	96,917
August 1, 1952 .....	111,680

RAILWAY AGE IS A MEMBER OF ASSOCIATED BUSINESS PUBLICATIONS (A.B.P.) AND AUDIT BUREAU OF CIRCULATION (A. B. C.) AND IS INDEXED BY THE INDUSTRIAL ARTS INDEX AND BY THE ENGINEERING INDEX SERVICE. RAILWAY AGE INCORPORATES THE RAILWAY REVIEW, THE RAILROAD GAZETTE, AND THE RAILWAY AGE GAZETTE.

## Departments

Accounting .....	14
Benchmarks & Yardsticks .....	77
Current Publications .....	61
Education .....	13
Equipment & Supplies ....	18
Figures of the Week .....	15
Financial .....	108
Labor & Wages .....	15
Law & Regulations .....	11
New Facilities .....	18
Operations .....	13
Organizations .....	16
People in the News .....	13
Public Relations .....	13
Railway Officers .....	115
Rates & Fares .....	13
Securities ....	110
Supply Trade .....	17
Traffic .....	14
What's New in Products ....	67

## Week at a Glance CONTINUED

the railroads do it—or so the truckers would have you believe. What's fair about that? **80**

**Line relocations** in mountainous territory run into big money, but the Norfolk & Western is convinced they pay off—hence another \$3½-million investment in such an improvement of 5 miles of its heavy-duty main line in West Virginia. **81**

**50,000 boys all in one place** could create problems that would faze any conceivable organization of adults. That's what this summer's Boy Scout Jamboree in California involved, and the railroads' part in making the event a success was a considerable one, requiring the long-haul movement of 27,000 energetic—and hungry and thirsty—youngsters in 75 special trains. **84**

**Off-the-street switching** has so many advantages over surface train movements through downtown traffic that the Missouri Pacific expects to get freight through St. Louis with much less difficulty, now that its \$1¼-million Poplar Street highline has been completed. **90**

**Temperatures below zero**—that's the ticket for long-haul transportation of frozen foods and other lucrative big-volume perishables traffic. Mechanical refrigeration is the means to assure such temperatures dependably and uniformly, railroads operating reefers are learning, and suitable equipment has been developed to meet their requirements. One such car was exhibited last week in Chicago by the Burlington, and the Santa Fe has just begun their use in regular service, with others coming along. **12 and 93**

**Howard E. Simpson**, salesman, heads the B&O. What's his background and what is the condition of the property which R. B. White is turning over to him? **97**

**Radio keeps trains moving**, and in an operation like the Great Northern's iron ore business, which adds up to 2,500 carloads a day to the docks—and 2,500 empties

## Week at a Glance CONTINUED

to be returned to the mines—nothing can be much more important than moving the trains. Radio on locomotives and cabooses and at wayside stations is “like a drop of oil” in keeping this complex transportation machine working smoothly. **100**

**Fred A. Poor**, long a leader in the railway supply industry, is dead at the age of 83. **106**

### BRIEFS

**Radioactivity** now being used in D&RGW diesel locomotive service tests in an effort to obtain information about dust, oil engine wear which can be secured in no other way. Tests have been in progress for several weeks using a diesel wrist-pin activated for a short period of time—and under suitable protection—with gamma rays. It is expected that some preliminary conclusions will be drawn within the next 60 to 90 days.

“**Loss and damage causes woe, loss of business, jobs and dough**”—was the prize winning slogan in a contest on loss and damage prevention recently conducted among its employees by the Railway Express Agency. Winner of the \$1,000 grand prize was Willard J. Strickler, a train messenger at Portland, Ore.

**Newest New Haven diner**, specially planned with low operating costs and high customer satisfaction in mind, was built into an old parlor car shell. Gleaming with bright lights and shining metal kitchen, right out in public view, its colorful decorations appealed to preview visitors to whom it was shown in New York.

**I.C.C.'s Ogden Gateway decision's effective date** has been postponed another 90 days—

from October 7 to January 7, 1954. The postponement was at the request of the court to which the case has been appealed.

“**What happens . . . to freedom of expression**”—if taxpaying citizens and corporations (including railroads) are to be forbidden to advocate weight and size limits on trucks—if long-haul truck corporations are to have the sole privilege of public discussion of such size and weight limits? Yet, says the Eastern Railroad Presidents Conference in a current advertisement, the truckers' latest tactics of “competition by lawsuit” have as their objective the denial to anyone else of the right to oppose those same truckers' demands for larger and heavier trucks.

**A.A.R. member roads** will hold their 1953 annual meeting November 20 in Chicago at the Blackstone Hotel.

**Railroad Retirement Board's new chairman**, Ray Kelley of Detroit, is a former national commander of the American Legion. That explains why he was sworn in at the Legion's national convention at St. Louis last week by U.S. Vice-President Richard Nixon.

**Four scholarships of \$400 each** have been donated to the Dunwoody Institute in Minneapolis for the 1953-54 school year by the Minneapolis & St. Louis. The four M&StL scholarships will be used to finance the industrial training of one boy from each of the four states served by the railroad.

**Praise for the railroads from Ford Motor Company's general freight agent** is a result of success in cutting freight loss and damage. Ford is a big shipper, of course, and it is reported that the number of the firm's loss and damage claims runs well into six figures in an average year, so its freight claim ratio is a very sensitive barometer in measuring the effectiveness of damage reduction efforts.



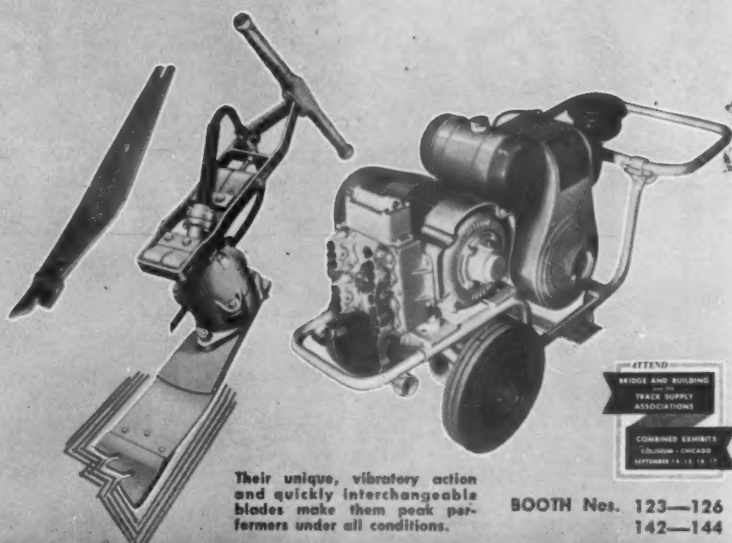
# JACKSON 2 to 4-TAMPER TIE-TAMPING OUTFITS



**NOW FASTER, MORE POWERFUL THAN EVER!**

The new, much more powerful Power Plant, Model M-22 A which supplants the Model M-20 in the famous Jackson manually guided tamping outfits, permits operating the tampers at several hundred more revolutions per minute than previously. This results in greatly increased tamper efficiency, even though for years Jackson tie tampers have been considered the finest equipment of their type by the vast majority of leading railroads.

Excellent for large jobs, since several may be grouped for any major ballasting or out-of-face operation, they are likewise ideal for low-lift and smoothing work with a small organization using 2 to 4 tampers. Let us show you how maximum results can be most economically achieved with Jackson Tamping Equipment.



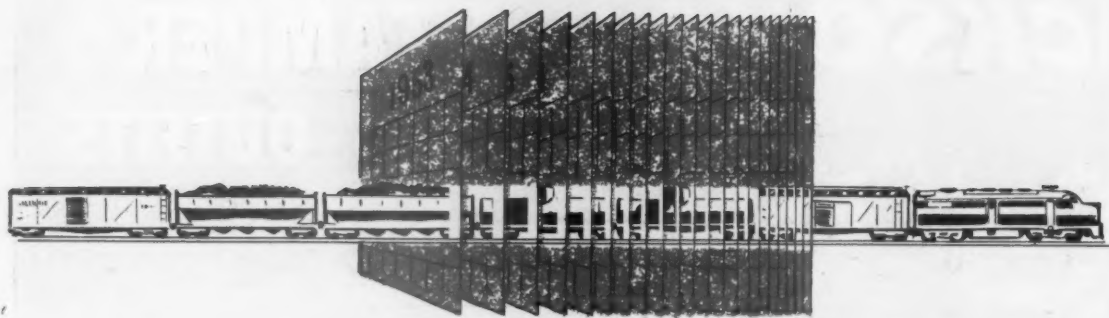
Their unique, vibratory action and quickly interchangeable blades make them peak performers under all conditions.

BOOTH Nos. 123-126  
142-144



**ELECTRIC TAMPER & EQUIPMENT CO. Ludington, Mich.**

CANADIAN REPRESENTATIVES: MUMFORD, MEDLAND, LIMITED—WINNIPEG, MAN.



**Longer life for your rolling stock with**



**"RAILWAY" SPRINGS**

**Railway Steel-Spring Division**

AMERICAN LOCOMOTIVE COMPANY

By dampening and cushioning heavy jars and jolts, "Railway" longtravel springs increase the service life of rolling stock and cut roadbed maintenance costs.

These heavy-duty coil springs bring higher revenue, too, by reducing claims for lading damage.

These advantages are the direct results of the long experience of Railway Steel-Spring Division, one of the oldest makers of springs in the country. Next time you need springs, call your Alco sales representative in New York, Cleveland, Chicago, Richmond, St. Louis, St. Paul, San Francisco.



## Roads Along RRs Proposed

**Ford Motor executive suggests building elevated expressways over RR tracks or surface expressways on RR rights-of-way**

The "fantastic" costs of new highway construction might be overcome by constructing elevated expressways over railroad tracks or surface expressways on railroad rights-of-way, George J. Crimmins, Ford Motor Company director of dealer relations and business management, said in White Sulphur Springs, W. Va., on August 28. Addressing the national Project Adequate Roads Committee meeting, Mr. Crimmins said that officers of the New York Central and the Chesapeake & Ohio in Detroit, with whom he discussed the plan, were "very favorably inclined."

Among possible advantages of such elevated expressways he cited good existing routes which fan out from downtown to residential sections. In addition, such construction would eliminate costly condemnation and destruction of property, and excavation and relocation of sewers and public utilities. No overpasses would be required, Mr. Crimmins said, and approaches and exits every mile would be sufficient.

Mr. Crimmins acknowledged that details of his proposal—including relative cost of construction, maintenance, technical and legal problems—would have to be studied thoroughly. But, he said, the plan offered an opportunity for constructive leadership in highway planning.

If elevated expressways proved impractical, railroads might move underground and make room for highways on surface rights-of-way, he continued. Or, if sufficient space exists, expressways could be located parallel and adjacent to existing railroad lines, especially in rural areas. "The routes have been efficiently surveyed, the curves are flat and the grades are invariably the best available," Mr. Crimmins said. Even with insufficient space, the cost of acquiring enough land would be much less than that in selecting new routes, he pointed out.

Other possible means of railroad participation in solving traffic problems were outlined by the motor company executive as follows: Overhead construction could make new parking areas available in congested urban areas, where many railroads have vast yards; railroads could expand the practice of having parking areas available at suburban stations, thereby reducing downtown traffic congestion; and, finally, railroads with non-profit-

able routes could be permitted to reroute those lines and make their rights-of-way available for expressway construction.

## Law & Regulation

### Despatch Employees Held Not Eligible For Passes

Employees of Despatch Shops, a New York Central subsidiary, are not eligible for free railroad transportation, at least in the opinion of Division 3 of the Interstate Commerce Commission.

The division expressed its views in response to a request by the railroad. The road said it never considered Despatch a common carrier, but a recent court ruling held that employees were eligible for railroad retirement benefits. This created "uncertainty" over whether the employees were entitled to free transportation under Sec-

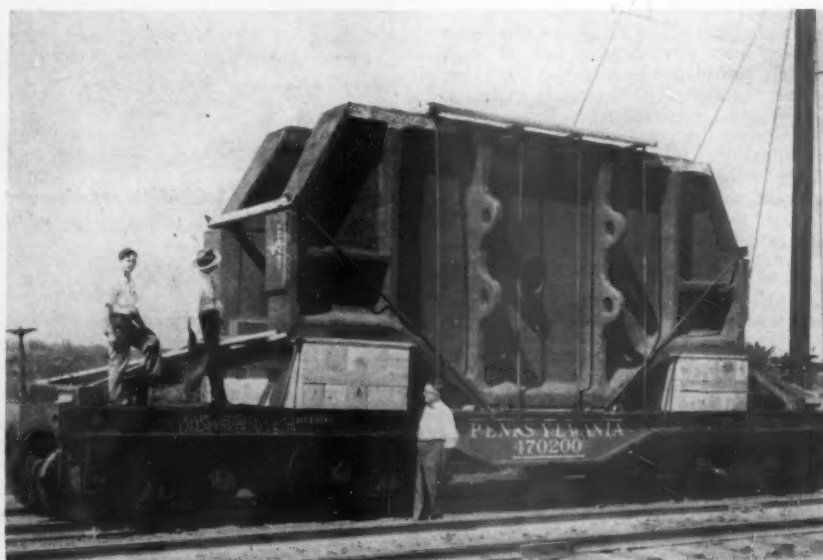
tion 1(7) of the Interstate Commerce Act (*Railway Age*, February 16, page 16).

Division 3 observed that the I.C. Act prohibits issuance of passes by a railroad "except to its employees." It said no mention was made of "affiliates," and concluded that Despatch employees were not employees of a carrier as defined in the act.

### R.B.A. Gets More Views On Transport Changes

On the theory that a primary job of railroads is to get support of other business interests in their fight for regulatory equality, the Railway Business Association, some two years ago, began inquiry among business organizations about the country—both big city outfits and "grassroot" associations—to seek out their views on its proposals for fair return, user payments, unified regulation, and other remedial legislative steps. The views of over 100 such organizations were received and compiled in a booklet, "Sound Policies in Transportation," made available for distribution on September 1. The digest is a revised and enlarged edition of a report first published by R.B.A. in September 1951.

**What Is Needed**—There appears to



**HEAVIEST SINGLE OBJECT** ever imported via New York, this 414,400-lb. casting from England was recently moved on a special 16-wheel Pennsylvania flatcar from Jersey City, N.J., via Columbus, Ohio, en route to South Charleston, W. Va., where it

will be machined by the U.S. Naval Ordnance plant before installation as part of a 50,000-ton hydraulic press. Dimensions of the load presented no difficulties to the PRR, but its high center of gravity and concentrated weight necessitated special handling.

## OHIO COMMISSION ORDERS B&O TO SPEND \$150,000

The Baltimore & Ohio must install by the first of next year an estimated \$150,000 worth of new equipment on the 485 motor cars it operates in Ohio, according to an order of the state's Public Utilities Commission. Under terms of the order, the B&O must equip all 485 cars with the following equipment: Full-width windshields with manually operated wipers; full-beam electric headlights and electric tail lights, and suitable tops with side curtains.

The commission's justification for its order was a recommendation by an attorney-examiner who found "the absence of headlights and electric tail lights creates a definite safety hazard when cars are operated under adverse weather conditions." The attorney-examiner added that "the absence of a full-width windshield and side curtains creates a hazard to the health and welfare of the employees under adverse weather conditions."

be, according to the summary, general agreement in all sections of the country on what is needed to set transportation aright. Most respondents recommended, among other things:

"(1) All carriers should be permitted to earn a fair return on net invested capital. (2) While most of those quoted opposed subsidies, a number emphasized that withdrawal of subsidies should be gradual, to prevent undue disturbance of existing transport services. (3) There was substantial agreement that public interest requires payment of adequate user charges by all users of transportation facilities constructed and maintained by the government. (4) Many also agreed with the proposal that all carriers should have equal opportunity in the use of such publicly provided transportation facilities, subject to approval of regulatory authority. (5) A considerable number favored continuation of the present policy of making consolidations voluntary and permissive rather than mandatory, and some also proposed that the same policy be applied not only to consolidations of railways, but also to consolidations between carriers of different types. (6) There was substantial support for regulation of all carriers by a single agency reporting directly to Congress."

### Subsidies

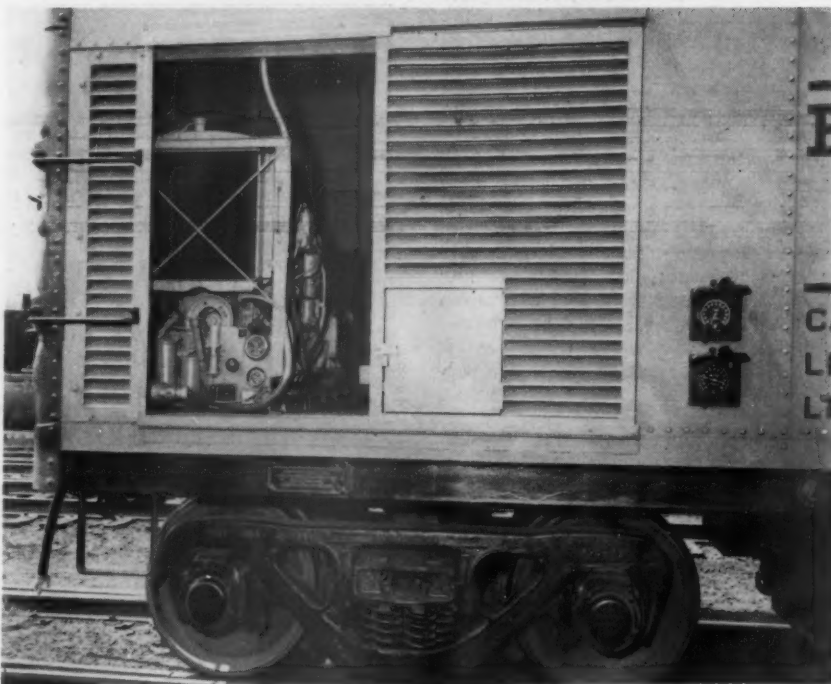
Some associations expressed themselves strongly and bluntly on the subsidy issue. The Cleveland Chamber of Commerce said: "No facility for commercial transportation [should] be constructed by the government until after a thorough and impartial investigation shall have indicated the users are willing and able to pay for it." And replied the Garfield (N.J.) group: "We are also strongly opposed to subsidies of all sorts. Postal rates should be raised to cover the costs. Trucking, airlines and all other forms of transportation should pay their own way;

and above all, heavy truck overloading that is destroying our roads should be stopped."

**Pro-Status Quo**—Standing alone among those quoted, the Kansas City (Mo.) Chamber of Commerce indicated



FIRST of the new BREX cars was displayed August 31.



MECHANICAL-COOLING equipment on the first BREX refrigerator is of

the Frigidaire-8 type, driven by a G. M. Detroit diesel engine.

## Thirty New BREX Mechanical Reefers

The first of 30 new Burlington 70-ton "superinsulated" mechanical refrigerator cars, built at the Alexandria, Va., shops of the Fruit Growers Express Company, was placed on public display at the Union Station, Chicago, August 31. The cars are 50 ft. long—10 ft. more than conventional refrigerator cars—and the cubic capacity is 30 to 50 per cent greater. Provided with modern diesel-driven mechanical-cooling equipment, the cars also have automatic temperature control in heating and hence are all-purpose units, adapted to shipment of frozen foods as well as other perishables requiring

milder cooling or warming up to 70 deg. F.

The 30 new cars for the Burlington Refrigerator Express Company, subsidiary of the CB&Q, are to augment the present pool of 277 Fruit Growers Express and Western Fruit Express mechanical refrigerator cars which have been in successful daily operation for over three years, transporting all classes of perishables to all parts of the country in all kinds of weather.

The new cars are equipped with herring-bone floor racks, long-travel easy-riding truck springs, rubber-cushioned draft gear and roller bearings. One outstanding innovation of the new cars is plug-in ceiling illumination, which will facilitate loading and unloading under all lighting conditions.



that aids have been beneficial and "it cannot be definitely said that any one type of carrier has been given an advantage; or, if given an advantage, that such grants or concessions were not justified considering the whole."

The businessmen of Chester, Pa., summed up what they believed would solve the railroad part of the transportation problem: "Probably the best thing that could happen to the railroad business would be for all concerned—government and everybody else—to conclude finally that the railroad business is in fact a business that must make money to survive."

### Seatrain Routing Cases Will Be Argued Oct. 2

The I.C.C. will hear oral argument October 2 on cases involving railroad tariff provisions which propose to restrict routings via Seatrain Lines. Meanwhile, the commission has permitted Seatrain to intervene in one of the cases—No. 30954.

Also involved is I. & S. No. 5979. The commission recently recalled the two cases from its Division 3 to which they had been assigned. (*Railway Age*, July 13, page 17.)

## Rates & Fares

### Tariff Study Group Sends Out 20th Questionnaire

The Railroad's Tariff Research Group has sent out the twentieth of the series of questionnaires whereby it is seeking views of interested parties on ways and means of simplifying and otherwise improving tariffs.

Questionnaire No. 20 asks: What typographical style for the caption or subject of narrative tariff items is preferred for the sake of readability?

### Railroads Ask Increase In Refrigeration Charges

A railroad petition for authority to increase refrigeration charges was filed with the Interstate Commerce Commission last week.

The petition said costs of providing refrigeration service "exceed by substantial amounts" the present charges for the service. In 1951, costs exceeded revenues by "not less than \$12,000,000."

Charges which the roads now want to impose are designed to cover full cost and provide a "reasonable return on investment."

Railway refrigeration charges are set forth in Section 2 and Section 4 of the perishable protective tariff. Section 2 covers refrigeration on a "per car" basis, and here the roads are proposing an increase of about 31.6 per cent.

Increases under Section 4—on a "per

ton of ice" basis—would vary with different sections of the country. The carriers also want to increase charges for salt by three cents per 100 pounds.

The most recent increase in refrigeration charges, 15 per cent, was authorized by the I.C.C. in Ex Parte 166. The commission rejected any increase in Ex Parte 168 and Ex Parte 175.

## Education

### School on Operation of 70-95-Ton Locomotives

A school on operation of 70- and 95-ton diesel-electric locomotives will be conducted by the Locomotive and Car Equipment Department of the General Electric Company in Erie, Pa., October 5-9.

Instruction will include principles of operation, fundamentals of equipment and trouble shooting, and better maintenance practices.

Factory and classroom demonstrations will supplement regular classroom work to provide better understanding of principles presented. Two days of the week will be spent at the Cooper-Bessemer Corporation in Grove City, Pa., where the class will receive instruction on diesel engines. O. W. Hazelton will be the school instructor.

## People in the News

### Hayford Is Army's Deputy Chief of Transportation

Brigadier General Bertram F. Hayford has been designated deputy chief of the Army's Transportation Corps. Present head of the corps is the acting chief—Brigadier General Paul F. Yount.

Deputy Chief Hayford returned to the United States recently after serving three years as transportation officer for the U.S. Army Europe. He has had previous service in the Office of the Chief of Transportation as assistant chief of the Training and Organization Division.

### Army Honors R. B. White

The Army has presented a Certificate of Appreciation to Roy B. White, who retired from the presidency of the Baltimore & Ohio on September 1.

The certificate was in recognition of "outstanding patriotic civilian service to the Department of the Army over a long period of years." The service listed in the citation included Mr. White's work with the U.S. Railroad Administration during World War I; and his service as colonel and regional

director when the Army was operating the railroads during strike-threat periods in 1943, 1944 and 1948, and from August 1950 through May 1952.

### E. V. Grosvenor Joins Tariff Research Group

Edward V. Grosvenor has been appointed to membership on the Railroads' Tariff Research Group. He will assume the position on September 16 as successor to George W. Lupton, Jr., who has resigned.

Mr. Grosvenor who was born in 1903 at Idaho Springs, Colo., has been on the staff of the I.C.C.'s Bureau of Traffic since 1935. For 10 years prior to that time, he was employed by the Union Pacific.

The research group, headed by Chairman Charles S. Baxter, was set up by the railroads to simplify and otherwise improve tariffs.

## Operations

### Four Service Orders Expired August 31

Four I.C.C. service orders expired on schedule August 31 when the commission failed to extend them. They were:

No. 856, which provided for inclusion of Saturdays in computing demurrage.

No. 867, which governed handling of trap or ferry cars moving l.c.l. freight within a switching district.

Nos. 870 and 871, which restricted free time allowed on freight cars at ports.

## Public Relations

### C&NW Commuters Feature In Participation Radio Show

What is "probably the largest audience-participation radio show ever to be broadcast," according to the Chicago & North Western, marked the occasion of the 5,000th broadcast of the road's "400 Hour" on the morning of September 2, the first time the program has been thrown open to the public.

The railway converted its large passenger terminal in Chicago into a radio studio, where Pat Gallichio, program "emcee," invited the road's 35,000-odd commuters to join him in a cup of coffee and sweet rolls. For the occasion, all of radio station WMAQ's early morning programs from 5:30 a.m. to 7:55 a.m. originated in the main waiting room of the station, where coffee urns and a huge stock of paper cups were on hand.

Now in its seventh consecutive year,



the "400 Hour" is estimated to have an audience of at least a million and a half persons, although broadcast only in the Chicago area. Its daily diet is high-class music, weather and time information, and news about the C&NW's freight and passenger services.

## Traffic

### Radios for Passengers

Individual radios for exclusive use of each passenger are being made available to Pullman passengers on the Rock Island's "Colorado Rocket." The battery-operated radios are equip-

ped with an antenna which can be fastened to part of the window by suction cups and is adequate for clear reception of local stations. The dining car department handles distribution of the radios. A charge of \$1—about enough to cover cost of maintaining the batteries—is made for use of the set for an entire trip.

If the service proves popular and practical, is it planned to extend it to the "Golden State" between Chicago and Los Angeles.

### Growing of Grass Featured in New Union Pacific Movie

The importance of grass and its proper utilization is the theme of a new 15-minute, color and sound motion picture being released by the agricul-

tural development department of the UP. Entitled "Blade of Grass," it shows how western states produce a large volume of the nation's grass and seed requirements. It also shows proper use of grass for range, pasture, hay, erosion control, and home lawns.

Seventy-five prints of the film are being made available. One may be obtained upon request to the UP's agricultural development department at Omaha, or through the state agricultural college film libraries in the eleven states served by the UP.

### "Airslide" Car Goes on Tour

The General American Transportation Corporation's "Airslide" car will begin a nation-wide exhibit tour in Cleveland on September 14 and 15. From there the covered hopper car, especially designed for bulk shipping of dry, powdered or granular commodities, goes to Minneapolis on September 30 and October 1; St. Louis on October 14 and 15; New Orleans on October 28 and 29; Houston on November 5 and 6; Los Angeles on December 1 and 2; and, finally, San Francisco on December 14 and 15. At each stop the car will be put through a continuous loading and unloading operation. The car, built and leased by General American, who developed it in collaboration with the Fuller Company of Catasauqua, Pa., was described in detail in *Railway Age*, May 4, page 14.



T. G. SUGHRUE (center), president of the Boston & Maine, assists E. Spencer Miller, president of the Maine Central, into the cab of Canadian National wood-burning locomotive No. 40 at Portland, Me., as Robert C. Johnston, assistant vice-president,

operations, CNR, looks on. The locomotive is part of the CNR's "mobile museum" (*Railway Age*, April 20, page 98), which was on exhibition at Portland, Me., in mid-August, when it was visited by the railroad officers and many others.

## Accounting

### Deferred Maintenance Accounts Canceled

The I.C.C. has canceled, from its Uniform System of Accounts, those accounts which have provided for charges to operating expenses for deferred maintenance (way and structures and equipment) and for major repairs to equipment. The cancellation orders, effective October 1, apply also to related balance sheet accounts.

Relatively little use has been made of the accounts which were prescribed in 1942. They were for use in charging to operating expenses the estimated cost of maintenance work "which cannot be made during the current year due to priorities for materials and supplies or shortage of labor"; and the "estimated cost of anticipated major repairs to equipment that are usually made at intervals of several years."

### Fast Write-Off for Steam On Dieselized Southern

An annual depreciation rate of 48.75 per cent has been prescribed by the I.C.C. for steam locomotives carried on

the books of the Southern, which recently achieved complete dieselization of its operations. The commission's order, dated August 18, modified a previous order to prescribe a new scale of depreciation rates for all Southern equipment.

The prescribed rates, in addition to that on steam locomotives, are as follows: Diesel switchers, 3.89 per cent; diesel road locomotives, 4.9 per cent; diesel-motored passenger cars, 4.49 per cent; freight-train cars, 3.6 per cent; lightweight passenger-train cars, 3.28 per cent; heavyweight sleeping cars, 4.43 per cent; all other passenger-train cars, 4.29 per cent; work equipment, 4.94 per cent; miscellaneous equipment, 11.2 per cent.

## Figures of the Week

### Freight Car Loadings

Loading of revenue freight in the week ended August 29 totaled 818,461 cars, the Association of American Railroads announced on September 3. This was an increase of 1,030 cars, or 0.1 per cent compared with the previous week; an increase of 91,101 cars, or 12.5 per cent, compared with the corresponding week last year; and a decrease of 11,020 cars, or 1.3 per cent, compared with the equivalent 1951 week.

Loadings of revenue freight for the week ended August 22 totaled 817,431 cars; the summary for that week, compiled by the Car Service Division, A.A.R., follows:

REVENUE FREIGHT CAR LOADINGS			
For the week ended Saturday, August 22			
District	1953	1952	1951
Eastern .....	135,931	140,648	140,869
Allegheny .....	161,666	165,928	172,071
Poconchos .....	60,601	63,239	66,151
Southern .....	124,338	128,503	127,233
Northwestern .....	146,242	149,845	143,291
Central Western .....	127,747	124,134	124,706
Southwestern .....	60,906	61,932	64,266
<b>Total Western Districts .....</b>	<b>334,895</b>	<b>335,911</b>	<b>332,263</b>
<b>Total All Roads .....</b>	<b>817,431</b>	<b>834,229</b>	<b>838,587</b>
Commodities:			
Grain and grain products .....	51,545	48,643	53,862
Livestock .....	8,719	9,676	9,609
Coal .....	137,038	164,008	155,359
Coke .....	12,959	13,605	16,614
Forest products .....	47,468	49,527	46,079
Ore .....	97,036	93,187	90,126
Merchandise i.c.l. .....	70,012	73,778	75,041
Miscellaneous .....	392,654	381,805	391,897
August 22 .....	817,431	834,229	838,587
August 15 .....	807,387	805,756	829,398
August 8 .....	785,349	781,648	809,363
August 1 .....	793,754	733,076	813,388
July 25 .....	780,705	607,190	820,476
Cumulative total			
34 weeks .....	25,096,352	23,926,702	26,202,372

### June Accidents

The Interstate Commerce Commission has made public its Bureau of Transport Economics and Statistics' preliminary summary of "steam railway" accidents for June and this year's

first six months. The compilation, subject to revision, follows:

Item	Month of June		6 mos. ended with June	
	1953	1952	1953	1952
Number of train accidents*	775	696	4,462	4,867
Number of accidents resulting in casualties	46	38	276	278
Number of casualties in train, train-service and nontrain accidents:				
Trespassers:				
Killed .....	88	119	455	457
Injured .....	107	121	444	455
Passengers on trains:				
(a) In train accidents*				
Killed .....	32	34	19	138
Injured .....	165	154	851	860
(b) In train-service accidents				
Killed .....	3	3	11	3
Injured .....	3	3	11	3
Travelers not on trains:				
Killed .....	1	..	5	7
Injured .....	56	72	406	364
Employees on duty:				
Killed .....	37	29	152	180
Injured .....	1,708	1,609	9,510	10,063
All other nontrain-passengers**				
Killed .....	131	98	785	764
Injured .....	330	321	2,721	2,746
Total - All classes of persons:				
Killed .....	260	249	1,427	1,411
Injured .....	2,398	2,311	14,261	14,626

\*Train accidents (mostly collisions and derailments) are distinguished from train-service accidents by the fact that the former caused damage of \$325 or more to railway property in 1952. Beginning January 1, 1953, this minimum was raised to \$350. Only a minor part of the total accidents result in casualties to persons, as noted above.

\*\*Casualties to "other nontrain-passengers" happen chiefly at highway grade crossings. Total highway grade-crossing casualties for all classes of persons, including both trespassers and non-trespassers, were as follows:

Persons:				
Killed .....	115	86	735	697
Injured .....	195	188	1,843	1,832

## Labor & Wages

### O.R.C. Strike Threat Brings Washington Talks

Representatives of the Order of Railway Conductors and railroad management held a series of Washington meetings last week with the National Mediation Board which was undertaking to avert a strike threatened by the O.R.C. for September 10.

The immediate issue was whether the current moratorium agreement, to which the O.R.C. is a party, permits renewal at this time of the union's demand for a graduated wage scale for conductors, based on locomotive weights on drivers. The moratorium agreement was designed to bar new wage and rules demands until October 1. It was part of the May 1952 settlement of wage and rules cases which had brought on a 21-months period of government control and Army operation of the railroads.

At the time of this settlement, the weight-on-drivers demand was withdrawn "without prejudice" to future handling. O.R.C. now contends that the withdrawal arrangement permits a

### RAILROADS and O.R.C. REACH ACCORD; STRIKE CANCELLED

The strike threat posed by the Order of Railway Conductors for September 10 has been cancelled.

The National Mediation Board announced September 3 that "an understanding" had been reached between the O.R.C. and the railroads. The board said procedure "has been worked out for handling the request . . . after October 1."

At issue was the O.R.C. demand for a graduated wage scale for conductors, based on locomotive weights on drivers.

Last week's agreement was, in effect, a victory for the carriers. They had contended that the current moratorium agreement barred the O.R.C. demand until October 1, when the moratorium expires.

revival of the demand at this time. The railroads contend that, if the demand is to be revived, it must be made anew after October 1—because the withdrawal notice killed the original demand notice of 1949.

O.R.C.'s threat was to strike a "railroad or railroads" on September 10. The prospective victim or victims were not identified immediately. Theories as to why the union would pose a strike threat for the purpose of gaining relatively little time include one to the effect that it wants to get the case advanced by October 1 to a point where it won't "get lost in the shuffle" as the moratorium's end brings new wage and rules demands from all the unions.

### SN Men Walk Back

Conductors and trainmen of the 265-mi. Sacramento Northern ended their strike against the road on August 23, after halting operations for 12 days. On the following day an agreement was reached to dispose of the issues involved—none of them involving wages. One claim is to be withdrawn, four are to be paid by the railroad and three are to be submitted to a special board of arbitration including one neutral member. The road had insisted the strike be ended before it would consider concluding negotiations.

Employees who struck are members

...The Norfolk & Western has received the Maryland Traffic Safety Commission award for "outstanding contribution to promotion of traffic safety activities during 1952." Maryland's Governor Theodore R. McKeldin presented the scroll to H. C. Crueger, N&W general agent at Baltimore, during a ceremony at the State House in Annapolis.



of the Brotherhood of Railroad Trainmen. The SN is a subsidiary of the Western Pacific, the personnel of which were not involved. WP road trainmen have been represented by the United Railroad Operating Crafts since June 1952.

## Organizations

### November Conference Will Discuss RR Testing

To promote exchange of up-to-date technical information on "non-destructive" testing in the railroad field, the Magnaflux Corporation is sponsoring another railroad inspection conference November 19 and 20 at the Sheraton Hotel, Chicago. Previous meetings of this type in 1946 and 1949 proved successful. Topics of particular value include: A discussion panel on "Inspection of Diesel Locomotive Parts"; a paper on "Mechanics of Fatigue"; a session on "Use of Penetrant Inspection Methods in Railroad Shops"; a paper on "Non-Destructive Testing of Maintenance of Way Equipment"; and a discussion forum on "Inspection of Car Parts."

Among discussion leaders participating will be H. T. Cover, assistant vice-president—operations, and chief of motive power, Pennsylvania; Ray McBrian, engineer of standards and research, Denver & Rio Grande Western; L. E. Simon, chief metallurgist, Electro-Motive Division, GMC; E. B. Fields, engineer of tests, Santa Fe; V. C. Barth, assistant engineer of tests, Chi-

cago & North Western; M. A. Hanson, research engineer, Gulf, Mobile & Ohio.

### Coordinated Mechanical Associations Programs

The Coordinated Mechanical Associations—Air Brake, Car Department Officers', Locomotive Maintenance Officers', Master Boiler Makers', and Railway Fuel and Traveling Engineers'—will meet at the Hotel Sherman, Chicago, September 14-16. Paul E. Feucht, president, Chicago & North Western, will be guest speaker at the Presidents Luncheon at noon on September 15. The subject of his talk will be "Progress Is Not Self Made." There will be no exhibit. The program is detailed below.

#### AIR BRAKE ASSOCIATION

Monday, September 14  
10:00 a.m.

Address by President R. F. Thomas, Secretary's report.

Handling Air-Brake Equipment and Material—Central Air Brake Club.

Multiple Capacity Brakes for Freight Cars, by G. L. Cotter, Westinghouse Air Brake Company.  
2:00 p.m.

Stopping Freight Trains from Rear, by F. R. Ellis, Reading.

Paper by Pittsburgh Air Brake Club.

Report of Approved Maintenance Practice Committee—24-RL Equipment by F. W. Dell (chairman), GTW.

Tuesday, September 15

9:00 a.m.

Air Brake Know How Pays Dividends, by J. V. Ellsworth, New York Air Brake Co.

Address on Apprenticeship Training by L. B. George, CPR.

Report of Committee on Standardization of Air Brake Equipment for Diesel and Turbo Electric Locomotives, by A. M. Malmgren (chairman), StLSF.

The Brake Pipe Flow Indicator—Manhattan Air Brake Club.

2:00 p.m.

Train Handling and Trouble Shooting (Joint session with RF&TEA).

Wednesday, September 16

9:00 a.m.

Operating with Automatic Train and Speed Control, by J. W. White, PRR.

Assembling, Inspection and Testing of Locomotive Brakes Prior to Service—St. Louis Air Brake Club.

Air Compressor Lubrication—National Railroad Lubrication Committee.

2:00 p.m.

Completion of papers and discussions of committee reports. Election of officers. Discussion of subjects for 1954 program.

#### LOCOMOTIVE MAINTENANCE OFFICERS' ASSOCIATION

Monday, September 14

10:30 a.m.

Address by D. S. Neuhart, UP. Subject: Gas Turbine Locomotive Maintenance and Operation.

Address by E. L. Duggan; AT&SF. Subject: Spot-Lighting the Accident Prevention Program.  
2:00 p.m.

Report of Committee on Diesel Personnel Training—E. V. Myers (chairman), StLSW. Subject: Methods Used to Train Personnel for Maintaining Diesel Locomotives.

Report of Committee on Diesel Electrical—W. P. Miller (chairman), C&NW. Subject: Flashovers—Rewiring Diesel Locomotives.

Tuesday, September 15

9:00 a.m.

Report of Committee on Shop Practices—C. H. Spence (chairman), B&O. Subject: Inspection and Maintenance of Diesel Wheels, Axles, and Roller Bearings.

3:00 p.m.

Special review of diesel locomotive maintenance industries. Arranged and conducted tours for L.M.O.A. members only.

Wednesday, September 16

9:00 a.m.

Report of Committee on Shop Planning—E. L. Neeley (chairman), UP. Subject: Scheduling and Flow of Work in Centralized Diesel Shop.

Report of Committee on Diesel Mechanical—J. W. Luke (chairman), AT&SF. Subject: Diesel Engine Lubrication Maintenance Problems.  
2:00 p.m.

Address by Allyn C. Breed, Bureau of Locomotive Inspection.

Report of Committee on Diesel Material Reconditioning and Control—H. J. Anderson, NYC System. Subject: Economical Reclamation of Diesel Locomotive Parts.

#### MASTER BOILER MAKERS' ASSOCIATION

Sunday, September 13

4:00 p.m.

Meeting of Executive Board.

Monday, September 14

10:00 a.m.

Address by President H. R. Barclay.

Report of the Executive Board. Financial report.  
2:00 p.m.

Messages by Secretary-Treasurer Albert F. Stiglmeir and G. L. Ernstrom, NP.

Report on Topic No. 3—Study and Recommendations and Methods of Treating Water for Diesel Locomotive Cooling and Steam Generator Feedwater System.

Report of Committee on Law.

Tuesday, September 15

9:00 a.m.

Report on Topic No. 1—Recommended Practices for the Cleaning, Inspection and Testing of Steam Generator Coils to Determine Their Condition and Eliminate Failure.

Message by R. B. Russell, Bureau of Safety, CPR.

Report on Topic No. 2—Study and Recommendations for the Washing and Cleaning of Diesel Locomotive Water Tanks.

Election of officers.

2:30 p.m.

Report on Topic No. 4—Study and Recommendations for the Welding and Brazing of Individual Diesel Locomotive Parts as well as the Hard Facing of Wearing Parts.

Message by Allyn C. Breed, Bureau of Locomotive Inspection, and H. R. Cawley, mechanical assistant, Board of Transport, Commissioners for Canada.

Wednesday, September 16

9:00 a.m.

Reports of Committee on Memorials and Committee on Resolutions.

Report on Topic No. 5—Recommended Good Practices for Preparing Steam Locomotive Boiler for Monthly Inspection to Enable It to Remain Away From Home Terminal for 30-day Period.

Report on Topic No. 6—Inspection and Maintenance of Air Reservoirs on Steam and Diesel Locomotives With Special Reference to Standardization of Washout and Inspection Plugs.

#### CAR DEPARTMENT OFFICERS' ASSOCIATION

Monday, September 14

10:00 a.m.

Address by President A. H. Keys, B&O.

Report of Committee on Analysis of Train Yard Operation, C. E. Dyer, C&NW.

Address by W. C. Baker, B&O.



**WHO'S THERE?** There'll be no doubts in the minds of those conventioners who view this registration board which will be at the Railway

**Age—Railway Track and Structures booth (No. 76) in the Coliseum, Chicago, Sept. 15-17 at the Roadmasters' Bridge & Building Conventions.**

2:00 p.m.  
Report of Committee on Interchange and Billing for Car Repairs, C. W. Kimball, Southern.  
Report of Committee on A.A.R. Loading Rules, A. H. Petersen, Belt of Chicago.

Tuesday, September 15

9:00 a.m.  
Report of Committee on Wheel Shop Practices—E. W. Kline, B&O.  
Address on Human Relations, by F. J. Goebel, B&O.

Report of Committee on Car Lubrication—H. J. Baker, C&O, PM district.  
Comments by W. M. Keller, Association of America Railroads.

2:00 p.m.  
Report of Committee on Expeditions Handling of Repairs to Loading of Empty Foreign and System Light Repair Cars—A. J. Larrick, B&O.  
Report of Committee on Air Conditioning Equipment—Operation and Maintenance—C. Manzelman, CMS&P&P.

Wednesday, September 16

9:00 a.m.  
Report of Committee on Maintenance of Passenger Car Equipment—J. F. Swafford, Washington Terminal Company.

Address on Car Department's Contribution to the Safety Effort, by F. R. Callahan, Pullman Company.  
Report of Committee on Painting—Recent Developments of Maintenance Painting of Railway Equipment—F. M. Vogel, D&RGW.

Miscellaneous reports. Election of Officers.

#### RAILWAY FUEL AND TRAVELING ENGINEERS' ASSOCIATION

Monday, September 14

10:00 a.m.  
Address by President R. D. Nicholson, Secretary's report.

Safety in Railroad Operation, H. G. Conner, B&O.

Education of Engine Crews, Diesel Locomotives, J. S. Swan, L&N.  
Business session.

2:00 p.m.  
Fairbanks Morse Diesel Locomotives and Engines (with slides), C. H. Morse, Jr., Fairbanks, Morse & Co.

Vapor Steam Generator—Operation and Trouble Shooting (with slides), G. C. Scott, Sr., Vapor Heating Corp.

Coal and Oil Burning Steam Locomotives, A. O. Scott, CN.

Tuesday, September 15

9:00 a.m.  
Design Developments of General Motors Diesel Locomotives (with slides), E. L. Formento, Electro-Motive Div., General Motors Corp.

Smoke Abatement, R. G. Norton, N&W.

Employee and Public Relations, by W. T. Wilson, CNR.

Address by D. B. Jenks, CRI&P.

2:00 p.m.  
Passenger-Train Handling; Freight-Train Handling; Dynamic Braking, A. M. Malmgren, (Joint session with Air Brake Association.)

Slid Flat Wheels on Diesel-Electric Locomotives (yard and road), R. H. Francis, StLSF.

Wednesday, September 16

9:00 a.m.  
Loss and Damage Due to Rough Handling, C. A. Naffziger, Association of American Railroads.  
Elesco Steam Generators (with slides), S. A. Leet, Superheater Co.

Panel discussion by S. Lodge, Alco-G.E.; E. L. Formento, Electro-Motive Div., General Motors Corp.; J. J. Gardner and W. B. Thornton, Baldwin-Lima-Hamilton Corp.; C. H. Morse, Jr., Fairbanks, Morse & Co.

2:00 p.m.  
Results of election.  
Conservation of Diesel Fuel, T. J. Conway, T&P.  
Diesel Failures and Remedies, J. R. Weller, B&O.

The New York Railroad Club will hold its annual outing at the New York Athletic Club, Travers Island, Pelham Manor, N.Y., September 17.

The next regular meeting of the Atlantic States Shippers Advisory Board will be held at the Hotel Commodore, New York, September 23-24.

The Traffic Club of St. Louis is sponsoring classes in traffic and transportation management in cooperation with the St. Louis board of education. The courses include a one-year elementary traffic course; a two-year special traffic course; a one-year interstate commerce course; and a one-year motor carrier rate course. Membership in



**FLAGSHIP** of the Baltimore & Ohio's New York Harbor tugboat fleet is the new "Roy B. White," named in honor of the road's former president and present chairman. Like other new B&O tugs, the "White" is 110 ft. long and is powered by 1,600-hp. diesel engines.

the club is not a requisite for enrollment. In addition, the club is sponsoring two scholarship awards and the Delta Nu Alpha St. Louis chapter is offering a third.

The Washington Chapter, National Railway Historical Society, has announced its fall branch line "rail ramble" out of Washington, D.C., October 4. The special train, leaving Union Station at 7:45 a.m., will run over a freight only branch of the Baltimore & Ohio from Weverton, Md., to Hagerstown, and thence over the Cumberland Valley division of the Pennsylvania to Harrisburg, Pa.

The Wyoming Valley Traffic Club will alternate its 1953-1954 meetings, all of which will be held the first Wednesday of each month, between Scranton, Pa., and Wilkes-Barre. Wilkes-Barre meetings will be at the Kingston House, Kingston, Pa., in October and December 1953, and February and April 1954. Scranton meetings will be at the Hotel Jermyn, Scranton, in November 1953 and January and March 1954.

James A. Green has been appointed director of the U.S. Clay Producers Traffic Association, New York. He was until recently traffic manager of the Corning Glass Works.

John C. Gorman, director of Farrell Lines International, will be guest speaker at the dinner meeting of the Women's Traffic Club of New York on September 8, in the Tower Club Rooms of the Park Sheraton Hotel.

The 31st annual convention of the American Railway Magazine Editors' Association will be held at the Hotel St. Charles, New Orleans, October 7-9. The program will include a

panel of employee readers of railroad magazines, a question and answer session, and an address by Clay Shaw of New Orleans' International House.

Charles A. Pinkerton, Jr., president and general manager of the Detroit & Mackinac, John A. Hill, president of the Air Reduction Company, and A. E. LaPointe, vice-president of the Manufacturers National Bank of Detroit, will be speakers at the annual meeting of the Treasury Division, A.A.R. The meeting will be held September 16-19 at the Grand Hotel, Mackinac Island, Mich. Presiding will be the division's chairman—A. M. Waldron, treasurer of the Nickel Plate, who will also deliver the traditional "chairman's address." There will be an informal talk by A. R. Seder, A.A.R. vice-president in charge of the Finance, Accounting, Taxation and Valuation Department.

The 69th regular meeting of the Allegheny Regional Advisory Board will be held September 16 and 17 at the Onesto Hotel, Canton, Ohio. Principal speaker at the luncheon on the 17th will be W. E. Umstadd, president, Timken Roller Bearing Co., Canton.

The St. Louis-Kansas City Regional Committee, Protective Section, Association of American Railroads, will hold its fall meeting September 17 at the Hotel York, St. Louis, at 9 a.m.

## Supply Trade

Goodyear Tire & Rubber Company has completed construction of a field warehouse at Gadsden, Ala., covering 9.2 acres of ground, with means for loading or unloading 16 railroad cars and 20 trucks at the same time.



**NEWTON H. WILLIS**, chief engineer of the railway division, Waukesha Motor Company, who has been appointed manager of the division, succeeding Lee W. Melcher, retired.



**J. Joseph Smith**, manager of the locomotive division plant of the **American Locomotive Company** at Schenectady, has been named manager of plant facilities for the company. He has been succeeded by **Wallace H. Allison**, general superintendent of the locomotive division plant.

**J. J. Basch**, Philadelphia division manager of **Oakite Products, Inc.**, has been appointed manager of research and product development and has been elected a member of the executive committee. **W. A. Baltzell**, southern division manager, has been named assistant sales manager.

**Glen W. Goodloe**, of the **Wichita, Kan.**, sales office of **Reynolds Metals Company**, has been transferred to the general sales organization at Louisville, Ky., as assistant manager of the transportation department.

**L. M. Gay**, manager of the Cincinnati branch of **Electric Storage Battery Company**, has been transferred to Cleveland as branch manager, succeeding **W. P. Roche**, granted an indefinite leave of absence.

The industrial power division of **International Harvester Company** has appointed **I. P. Payne** manager of industrial power sales; **C. E. Jones** and **W. M. Holland**, assistant managers of sales; **L. J. Lange**, general supervisor of sales development, and **E. A. Braker**, general supervisor of sales engineering.

The **Clark Equipment Company** has established a \$2,000 scholarship fund at the Illinois Institute of Technology, in honor of Eugene B. Clark, founder of the company. The scholarship will be awarded annually to a junior working for a degree in industrial engineering and majoring in materials handling.

**Bumpers, Inc.** has been formed at E. Cleveland, Ohio by **Max Pollock**, who formerly operated as an individual in design and promotion of rubber bumpers for loading docks.

## Equipment & Supplies

### Domestic Equipment Orders Reported in August

Domestic orders for 109 diesel locomotive units, 1,801 freight cars and nine passenger cars were reported by individual purchaser in *Railway Age* in August. Estimated cost of the diesel units is \$18,025,000; of the freight cars, \$13,135,000; and of the passenger cars, \$1,775,000. An accompanying table lists the orders in detail.

During the first eight months of 1953, *Railway Age* has reported domestic orders by individual purchaser for 955

## DOMESTIC EQUIPMENT ORDERS REPORTED IN AUGUST LOCOMOTIVES

Purchaser	No.	Type	Issue Reported	Builder
IHB	7	1,200-hp. Switching	Aug. 17	Electro-Motive
PRR	45	1,500-hp. Rd.-Sw.	Aug. 10	Electro-Motive
	11	1,200-hp. Switching	Aug. 10	Baldwin-Lima-Hamilton
	2	1,600-hp. Rd.-Sw.	Aug. 10	Baldwin-Lima-Hamilton
	1	2,400-hp. Rd.-Sw.	Aug. 10	Baldwin-Lima-Hamilton
	11	1,600-hp. Rd.-Sw.	Aug. 10	American-G.E.
	5	1,000-hp. Switching	Aug. 10	American-G.E.
	3	1,200-hp. Switching	Aug. 10	Fairbanks, Morse
Reading	5	2,400-hp. Road	Aug. 24	Fairbanks, Morse
	12	1,500-hp. Rd.-Sw.	Aug. 24	Electro-Motive
	7	1,600-hp. Rd.-Sw.	Aug. 24	American-G.E.

### FREIGHT CARS

Bangor & Aroostook	5	50-ton Box*	Aug. 31	Pullman-Standard
C&O	5	70-ton Hopper	Aug. 31	R.R. Shops
CMS&P&P	100	70-ton Cov. Hopper	Aug. 24	Pullman-Standard
Clinchfield	100	50-ton Box	Aug. 31	Amer. Car & Fdy.
Erie	500	50-ton Box	Aug. 24	Pullman-Standard
	300	70-ton Gondola	Aug. 24	Greenville Steel Car
	200	50-ton Box	Aug. 24	R.R. Shops
GM&O	1	140-ton Dep. Center Flat	Aug. 31	R.R. Shops
	90	50-ton Flat	Aug. 31	R.R. Shops
M-K-T	25	50-ton Flat	Aug. 24	Amer. Car & Fdy.
MP	100	50-ton Pulpwood	Aug. 31	R.R. Shops
PRR	300	70-ton Cov. Hopper	Aug. 24	Pullman-Standard
Southern	75	70-ton Flat**	Aug. 31	Thrall Car

\*Equipped with cushion underframe.

\*\*Equipped with roller bearings.

### PASSENGER CARS

AT&SF	6	Full-length Dome	Aug. 24	Budd
B&M	1	RDC-3	Aug. 10	Budd
Erie	2	Sleeping	Aug. 10	Pullman-Standard

diesel units costing an estimated \$152,039,000; 15,615 freight-train cars costing an estimated \$112,165,000; and 168 passenger-train cars costing an estimated \$28,729,094.

### FREIGHT CARS

The **Seaboard Air Line** has ordered 200 70-ton hopper cars from the Bethlehem Steel Company at an approximate cost of \$1,300,000. Deliveries are scheduled to begin during the first quarter of 1954.

## New Facilities

### Westinghouse Substations For Chilean Railroad

The Chilean State Railways will install two new 3,000-kw. Westinghouse ignitron substations on their electrified line between Santiago and Valparaiso, Chile. The new units will increase the railroad's power supply, enabling it to improve service between the country's capital and its chief port. Each substation will consist of an ignitron rectifier plus switchgear and transformers. The rectifiers will be installed first at existing substations to replace motor-generator sets installed in 1922. At that time Westinghouse supplied all electrical equipment for the railroad's original electrification.

The substations are scheduled for delivery early in 1954.

**Chicago South Shore & South Bend.**—This road has asked the I.C.C. to approve a line relocation job in-

volving 4.23 miles of main line in Hammond, East Chicago, and Gary, Ind. The road proposes to abandon the 4.23-mile segment to help relieve highway traffic congestion; and it seeks authority to construct and operate a substitute line of 4.31 miles.

The road advised the I.C.C. that existing trackage crosses streets where congestion is "detrimental" to service. The line goes along Chicago avenue for some distance, and the city of East Chicago has "repeatedly requested" removal of this segment. The proposed new line would skirt these more congested areas and would permit faster service.

Relocation of the line is expected to take two years, the road said, and the cost of the project would be paid out of current funds.

**Southern Pacific.**—Has authorized installation of 95 miles of centralized traffic control between Crescent Lake, Ore., and Eugene at an approximate cost of \$3,800,000. Immediate effect of the improvement will be to reduce running time of freight trains over the Cascade mountains, which, in turn, will result in greater availability of freight cars and motive power for handling commercial and defense shipments all over the railroad. Construction is scheduled to begin early in October.

**Bermuda grass seed**—207,400,000, 000 of them—will be planted in the hump yard now under construction by the Seaboard Air Line at Hamlet, N.C. The yard will have 61,000 sq. yd. of slope area, which will be anchored with two pounds of Bermuda grass per yard. That makes 122,000 lb. of seed, and there are, the Seaboard says, 1,700,000 seeds per pound.





**The Milwaukee's Revolutionary  
New Dome Cars Feature**

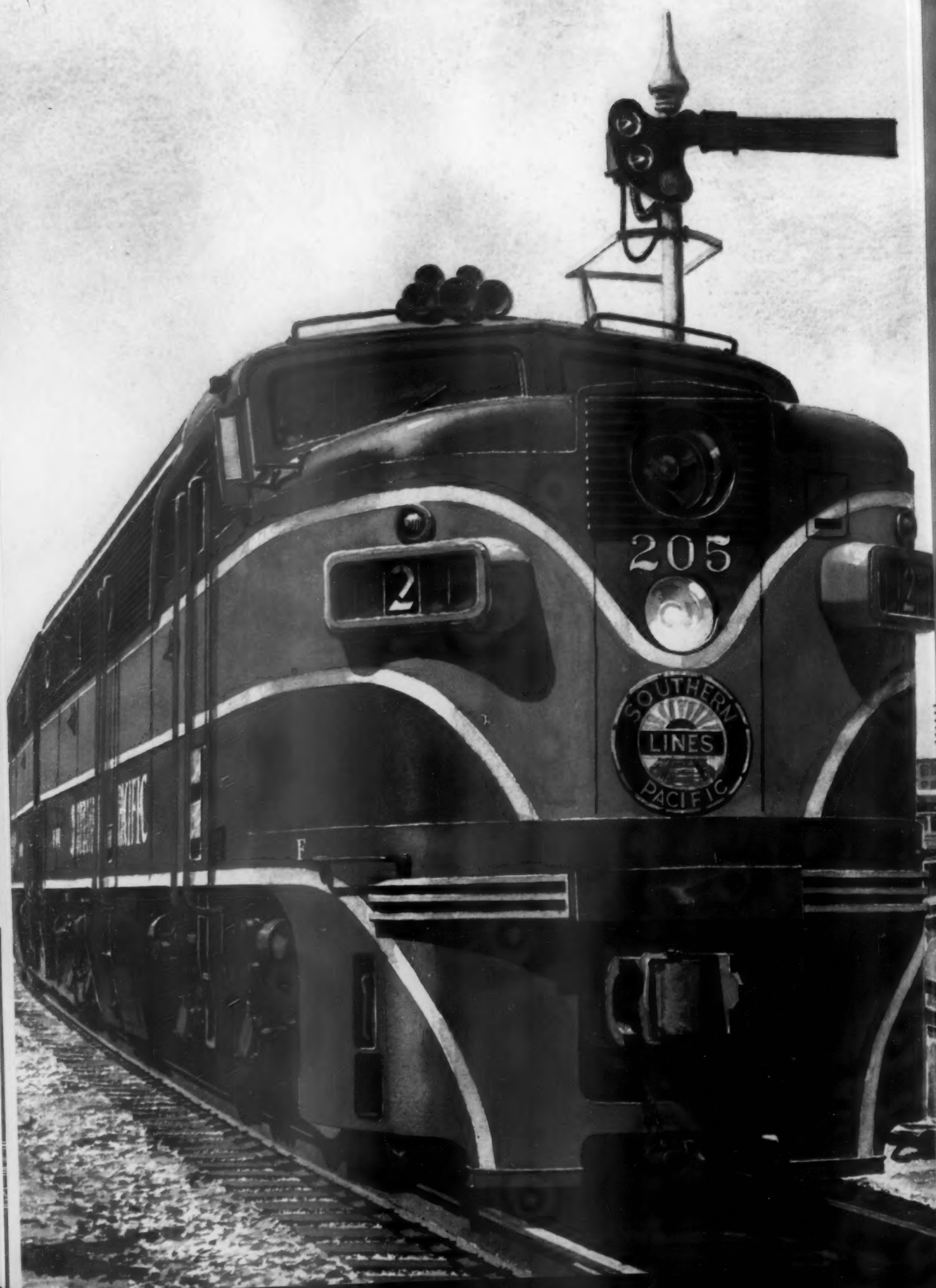
**Goodall Fabrics**

Goodall Fabrics upholstery contributes to the functional beauty and serviceability of the new Chicago, Milwaukee, St. Paul & Pacific Railroad Dome Cars...the first of their kind in American railroad history. For Goodall Fabrics are *Blended-to-Perform* with emphasis on durability, luxury, easy maintenance: features responsible for Goodall's leadership in transportation fabrics.

*Where Durability  
and Luxury  
are the keynote...  
Goodall Fabrics  
are preferred*



© 1953  
Goodall Fabrics, Inc., Subsidiary, Goodall-Sanford, Inc. (Sole Makers of World-Famous PALM BEACH® Cloth)  
GOODALL FABRICS, INC. NEW YORK • BOSTON • CHICAGO • DETROIT • LOS ANGELES





# Alco-GE Diesels Run 20,000 Trouble-Free Miles Per Month for Texas & New Orleans

Twenty thousand **trouble-free** miles per locomotive per month in heavy-demand passenger service! That's the month-after-month record attained with 4-year-old Alco-GE passenger locomotives by the Texas & New Orleans Railroad of the Southern Pacific System.

Despite this outstanding record of railroading efficiency, the T&NO now is aiming for an even better record—1,250,000 miles of service from its Alco-GE locomotives between overhauls.

Alco-GE locomotives are used on every

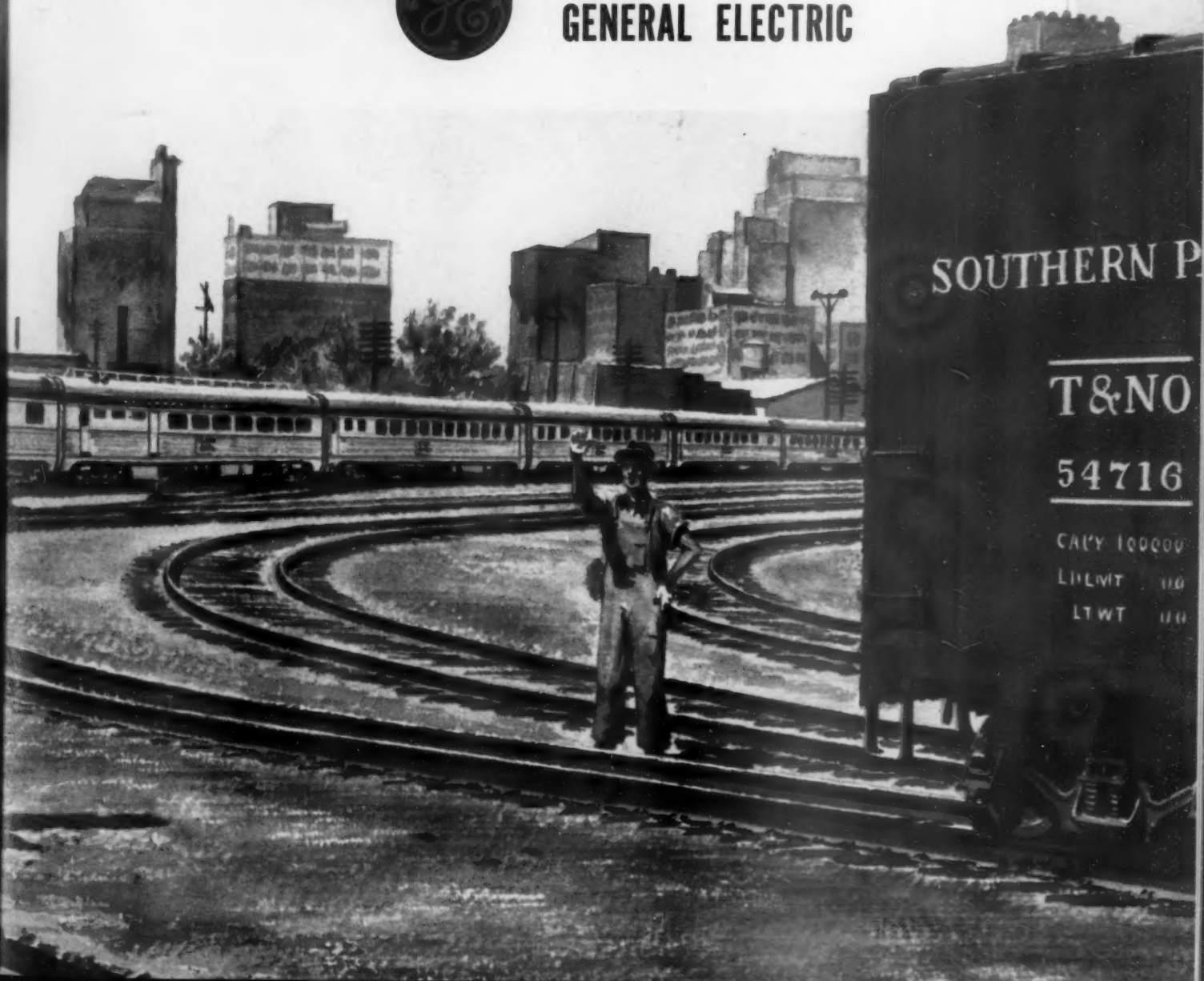
dieselized train in T&NO passenger service, including the crack SUNSET LIMITED and the mile-a-minute SUNBEAM. Proved performance makes this motive power the logical choice to help maintain the T&NO reputation for comfortable, on-time passenger travel.

Today, Alco-GE diesel-electrics are piling up revenue miles in passenger, freight, and switching service all along the 4,291 miles of T&NO track . . . exemplifying the modern methods and operating know-how of this progressive railroad.

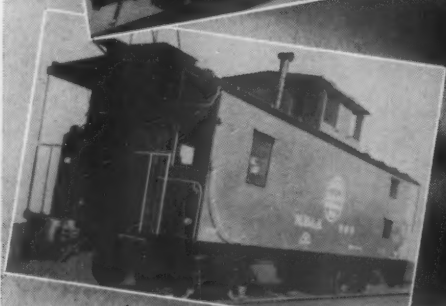
113-310



AMERICAN LOCOMOTIVE  
and  
GENERAL ELECTRIC







## Success Story

International has succeeded in building quality cabooses at production-line prices — and our success has been the railroads' success as well. We have freed the railroad from the burden of building non-revenue-producing cars in their own busy shops — we have given them a combination of safety and efficiency features available only in cabooses built by International — designed and constructed for long service at low maintenance cost — AND we have been able, through our production-line methods, to build these cars at money-saving prices.

International cabooses are now in service on many roads. Whether your needs are for one or a hundred cabooses —

International's production schedules and manufacturing facilities can care for your requirements quickly and economically.

We invite your inquiry by phone or letter.

# International

**RAILWAY CAR CO.**

GENERAL OFFICES: BUFFALO, N. Y.

Superior  
red lin  
(169,0  
cars T

Not  
Note a  
Waugh

It's  
the de  
protect

WAU

# OSCILLOGRAMS REVEAL SECRET OF TWIN CUSHION ...

**'G' CONTROL**

\*  
"G", the unit of change in velocity which is equal to the pull of gravity or 32.2 feet per second per second.

Superimposed above are exact copies of two oscillograms. The red line records impact of two friction draft gear equipped cars, (169,000 lbs. on the rail) at 7.53 mph. Black line shows impact of same cars Twin Cushion equipped, at 7.64 mph.

Note that peak coupler forces with Twin Cushions are 25% less. Note also that the rate of stress rise or "G" change is far less with Waughmat Twin Cushions, indicating a corresponding shock reduction.

It's shock that damages lading and cars. Twin Cushions greatly reduce the degree of shock to both cars and lading. That's the extra protection provided when you specify Twin Cushions.

for 'G' control ... Specify  
**WAUGHMAT**

*Twin Cushions*

TRADE MARK REGISTERED



A.A.R. APPROVED  
UNCONDITIONALLY

WAUGH EQUIPMENT COMPANY, New York • Chicago • St. Louis • Canadian Waugh Equipment Company, Montreal



# you get **MORE EARNING**

## **FREIGHT CAR DOLLAR**

with

# **LOW-COST SOLID BEARINGS**

*Solid Bearing Cars earn just as much  
as any other type—and save up to 20% on  
total cost per car. Offer operating advantages too!*

**Y**OU GET up to 20% more cars for your money when they're solid bearing equipped. That's 20% more hauling capacity for the same initial investment. It all adds up to the biggest possible return for each freight car dollar that you spend. And you need that big return because, for reasons entirely apart from the type of bearing installed, a freight car has to earn its way in *less than 3 hours a day*.

So it becomes a question of bearing efficiency and daily operating expense. Well, here the facts about solid bearings are known. Throughout the year there's an average of less than one failure for each 4,000 cars per day—an efficiency index of better than 99.97%

even though the cars average over 20 years old. New solid bearing cars do even better—often go millions of car miles without a bearing failure.

### **The Facts About Maintenance Expense**

Now what about maintenance costs? The indications are that all solid bearing maintenance, including lubrication expense, is being performed for less than the annual fixed charges necessary to the tremendous investment that would be required for non-standard bearings. For example, take a good look at the passenger equipment you operate. Chances are some portion of your passenger cars have

### **Freight Car Bearing Performance on 5 Class I Railroads for January, 1953**

ROAD	TOTAL CAR MILES	CAR MILES PER HOT BOX
A	51,822,612	2,879,034
B	102,741,163	1,802,477
C	103,304,521	1,122,875
D	23,393,843	935,754
E	10,825,750	1,082,575
Total	292,087,889	1,445,979

Here are the records for five top railroads in bearing performance. These records can be equalled or bettered by other roads.

# POWER for your



other than solid bearings installed. And if you figure in all your costs—the extra tools and facilities, the skilled labor and time, and inventories required, you'll see how much better off you are with solid bearing cars where maintenance costs are concerned.

## **Advantages of Solid Bearings in Train Operation**

But apart from low first cost, ease of maintenance and supply, and other hard economic facts, solid bearings have many operating advantages, too. They have the lowest accelerating and running resistance. You can take the maximum load, make the fastest schedule. You save up to 1500 pounds excess dead weight per car and get the smoothest ride on any standard truck. Best of all, you get a remarkably high bearing efficiency at the lowest possible cost.

If you really want to reduce hot boxes, at a cost that's in line with the economic realities

of freight train operation, you can do it best with low-cost solid bearing designs. Heat-resistant lining metals and low cost alarms (a must for most non-standard bearing types) are already available. Improved lubricating methods are being developed. Combine these improvements with an intensified program to upgrade maintenance standards and hot boxes will virtually disappear.

Be sure to get your free copy of the "FACTS about AAR Solid Journal Bearings." Just write to Magnus Metal Corporation, 111 Broadway, New York 6; or 80 E. Jackson Boulevard, Chicago 4.

## **MAGNUS** **Solid Bearings**

*Right for Railroads*

*...in performance...in cost*



**MAGNUS METAL CORPORATION** *Subsidiary of* **NATIONAL LEAD COMPANY**



# PRESSED STEEL CAR *builds a better car HERE...*



Automatic and semi-automatic submerged-arc welding equipment is utilized in building PSC Standard Payloader Hopper Cars in our Mount Vernon plant. Cars are rotated in Pandjiris Positioner (top picture) for more efficient "down welding" as shown in picture above.

Pressed Steel Car engineers have helped to make fact of the theory that standard design for hopper cars would help railroads reduce operating costs. With a clear understanding of the treatment which these cars must undergo at loading and unloading points, they have developed a hopper car with greater durability.

The PSC Standard Payloader Hopper Car is the result of their efforts. The performance of 1000 of these cars, purchased by the C&EI Railroad, is proof that PSC engineers have developed a better hopper car.

700 50-ton and 300 70-ton PSC Standard Payloader Hopper Cars were delivered to the C&EI in the first quarter of 1952. These cars are in a type of service, which is described by Mr. George E. Bennett, Superintendent of Motive Power, C&EI Railroad, as being "severe." He states: "...Most of the service





# to give better service **HERE**



of these cars has been between southern Illinois coal fields and our river terminal at Joppa, Illinois on the Ohio River. A shaker is used to unload the coal into the barges, which we consider a very severe service, and to date we have noted no deterioration or mechanical defects in the cars from this type of service."

The all welded design of the PSC Standard Payloader Hopper Car is the key to its success on the road. Greater strength is provided to assure longer service life. Smooth all welded interior insures a faster, complete discharge. No pockets to permit accumulations with accompanying corrosion.

In *all* details, the PSC Standard Payloader Hopper Car meets the same high specifications in materials, construction and design that have featured Pressed Steel Car products since the company made the first all-steel hopper car in 1897. Write for further information on the Standard Payloader Hopper Car and the Pressed Steel Car Program of Standard Freight Cars.

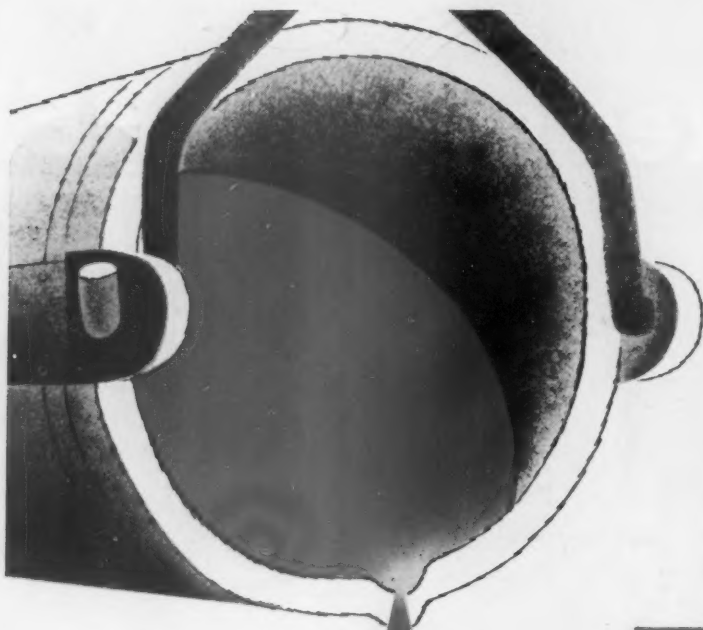


Straight side of car shown attests to the strength which PSC all welded design provides. This car and 999 similar cars, built by Pressed Steel Car Company, for the C&EI, have for the most part been assigned for more than a year to severe coal shake-out service.

## PRESSED STEEL CAR COMPANY, INC.

6 N. MICHIGAN AVENUE • CHICAGO 2, ILLINOIS





*Why a poured  
car wheel is*

**HARD**

**SOFT**

**WEAR-RESISTANT**

**RESILIENT**

**TOUGH** *all at once ...*

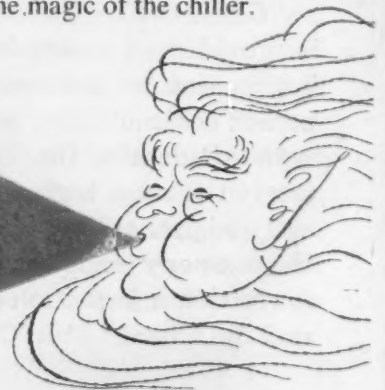
**the answer is the  
magic of the chiller**

Here is a wheel, poured from a single, carefully controlled iron mixture, that solidifies into a blend of irons ideally suited to car wheel performance.

The chiller—a ring of iron inside the mold—quickly draws heat from the outer rim of the molten wheel. Carbon particles remain combined with the iron as iron carbide, and the rim of the wheel becomes harder than steel . . . making a tread that will not flow under the heaviest of loads.

The center portion of the wheel cools and solidifies more slowly, permitting carbon to separate from the iron and leaving a softer iron, easy to bore, yet tough and resilient enough to dampen the shocks that occur in wheel service.

One metal in the ladle becomes two distinct types in the finished wheel. This is the magic of the chiller.



## 10-year record of improved values

1941-1946 . . . Improved control of mottled iron formation, providing clearer chill at tread and more impact-resistant gray iron backing.

1945 . . . AMCCW plants adopt limitation on chill depth in rim (see cross-section, opposite). Rim thickness increased for greater strength.

1947 . . . More rigid inspection and standards for rotundity, improved quality of wheels shipped from AMCCW plants.

1950 . . . New wheel design features heavier tread (stronger flange and rim) and more brackets (thicker, heavier, more continuous flange support).

## How AMCCW wheels save money for railroads

The railroad that runs its freight cars on AMCCW wheels saves money on every wheel it buys. Boring is faster, easier on cutting tools. Mounting requires less pressure, less exacting specifications. Prompt, short-haul delivery schedules permit the railroad to maintain a minimum inventory—and a smaller inventory is just as good as money in the bank.

You know you can get the wheels you want



Quick, low-cost delivery of chilled car wheels from the AMCCW plant near you.

In good supply  
Available locally  
Short-haul delivery  
Reduced inventory  
Low first cost  
Low exchange cost  
Increased ton mileage  
High safety standards  
AMCCW plant inspection  
Easier shop handling

## ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS



445 North Sacramento Boulevard, Chicago 12, Ill.

Albany Car Wheel Co. • American Car & Foundry Co.  
Griffin Wheel Co. • Marshall Car Wheel & Foundry Co.  
Pullman-Standard Car Mfg. Co. • Southern Wheel (American Brake Shoe Co.)



from the AMCCW plant on or near your line—in a matter of days.

The cross-section of an AMCCW wheel, illustrated above, shows the uniform depth of chilled iron that extends from the flange across the entire tread to a depth of not less than  $\frac{3}{8}$  of an inch, nor more than  $1\frac{1}{8}$  inches. This white iron is literally harder than the steel rail it rides upon.

Note how the softer, more resilient gray iron has been brought close to the white iron for maximum shock absorption. This tough gray iron extends on through the plate, brackets, and hub of the wheel.

## Continuous research

When you specify AMCCW chilled car wheels you get this ideal combination of qualities: hard, long-wearing metal on the tread, resilient shock-absorbing gray iron in the plate, easy-to-machine hub section, all cast into one integral unit.

You get near-perfect uniformity, too, and the advantages of improvements as they are born of research, developed, and approved for production. It all spells millions more car miles without failures. That's why it pays in safety and economy to insist on AMCCW car wheels for freight car service.





## *Start-to-finish Inspection*

guarantees the high quality

of **Edgewater**



**Wheels**

Close inspection guards the quality of Edgewater Rolled Steel Wheels.

At every step of manufacture, from the open hearth furnaces where the temperature of molten steel is checked by an immersion thermocouple shown above, to the painstaking examination that every finished wheel must pass before shipment, modern precision checking methods are employed. Only in this way can we be sure that Edgewater Wheels meet completely the rigid requirements of railroad service.

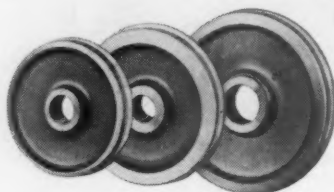


Experienced inspectors carefully check dimensions and examine the machined surfaces of every Edgewater wheel.



**Edgewater  
Steel Company**

P. O. BOX 478  
PITTSBURGH 30, PENNA.





**ACTION UNLIMITED -  
THANKS TO BATTERY POWER!**

When you want action-packed starting power, get it with Gould Kathanode Diesel Starting Batteries. These units are built for rough, tough service . . . their extra reserve cranks *any* diesel to firing speed in *any* weather. For quick starts, there's *no* power like Gould Battery power!

Specify  
GOULD KATHANODE  
BATTERIES  
For Diesel Starting



**GOULD** RAILROAD BATTERIES

GOULD-NATIONAL BATTERIES, INC., TRENTON 7, N. J.

Always Use Gould-National Automobile and Truck Batteries

©1953 Gould-National Batteries, Inc.



## NEW LOW COST BULK SHIPPING FOR DRY, POWDERED OR GRANULAR MATERIALS

This latest General American covered hopper car can cut shipping and handling costs for many products. It can replace the individual containers you now fill, close, protect, unload, handle and store. It protects loadings against infestation and contamination. It reduces shipping shrinkage and leakage—eliminates waste. The Airslide car can be loaded by gravity—hailed by the railroads—unloaded into any conveying system. Available in sizes suitable for high or low density materials.

When you rent Airslide cars, you have no ownership problems. General American keeps tabs on Airslide cars for you—knows where they are, keeps them on the go.



for rent

GENERAL AMERICAN'S NEW

# AIRSLIDE<sup>®</sup>

GENERAL AMERICAN TRANSPORTATION CORPORATION • 135 South LaSalle Street • Chicago 90, Illinois



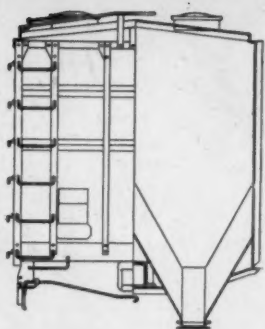
AIRSLIDE, a trade mark of the Fuller Company, Catasauqua Pennsylvania.



## LOAD BY GRAVITY

## UNLOAD INTO ANY CONVEYING SYSTEM

Just connect a hose carrying air at approximately 1 lb. pressure supplied by a small blower. The Airslide on the bottom of the car fluidizes the lading—and it flows out at whatever rate you need.



GACX 40999

# CAR



Offices in principal cities

The  
**AIRSLIDE CAR**  
is coming  
to town!  
See it yourself!  
See how it works!

Cleveland, Ohio  
Pennsylvania Railroad Freight Station  
September 14-15

Minneapolis, Minn.  
Milwaukee Passenger Station  
September 30-October 1

St. Louis, Missouri  
Union Station  
October 14-15

New Orleans, La.  
Texas Pacific-Missouri Pacific  
Passenger Station  
October 28-29

Houston, Texas  
409 Crawford Street, Near Union Station  
November 5-6

Los Angeles, Calif.  
Union Pacific Railroad  
Alameda Street Freight Terminal  
December 1-2

San Francisco, Calif.  
Southern Pacific Drumm Street Station  
December 14-15



# Clear the Track

WITH

## CHIPMAN WEED KILLERS

**to Clear the Way for Better,  
Labor-Saving Maintenance**

Successful control of weeds, grass and brush means better track maintenance at lower cost. This requires *proven* chemicals, plus the know-how to select and apply them. We offer a broad line of proven weed killers, together with over 40 years of experience in application service. Note, too, our strategically located plants.

Call on us any time regarding your weed control problem.



**14**  
Strategically Located  
Chipman Plants

**CHIPMAN CHEMICAL COMPANY, INC.**

*Manufacturers of*

**ATLACIDE • CHLORAX**

**A Complete Line of Weed, Grass and Brush Killers**

AMERICAN RAILROADS...

OVER 100 YEARS  
OF PIONEERING  
AND SERVICE TO  
AMERICA



OVER 75 YEARS  
OF PIONEERING AND  
SERVICE TO THE

AMERICAN RAILROADS



ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS

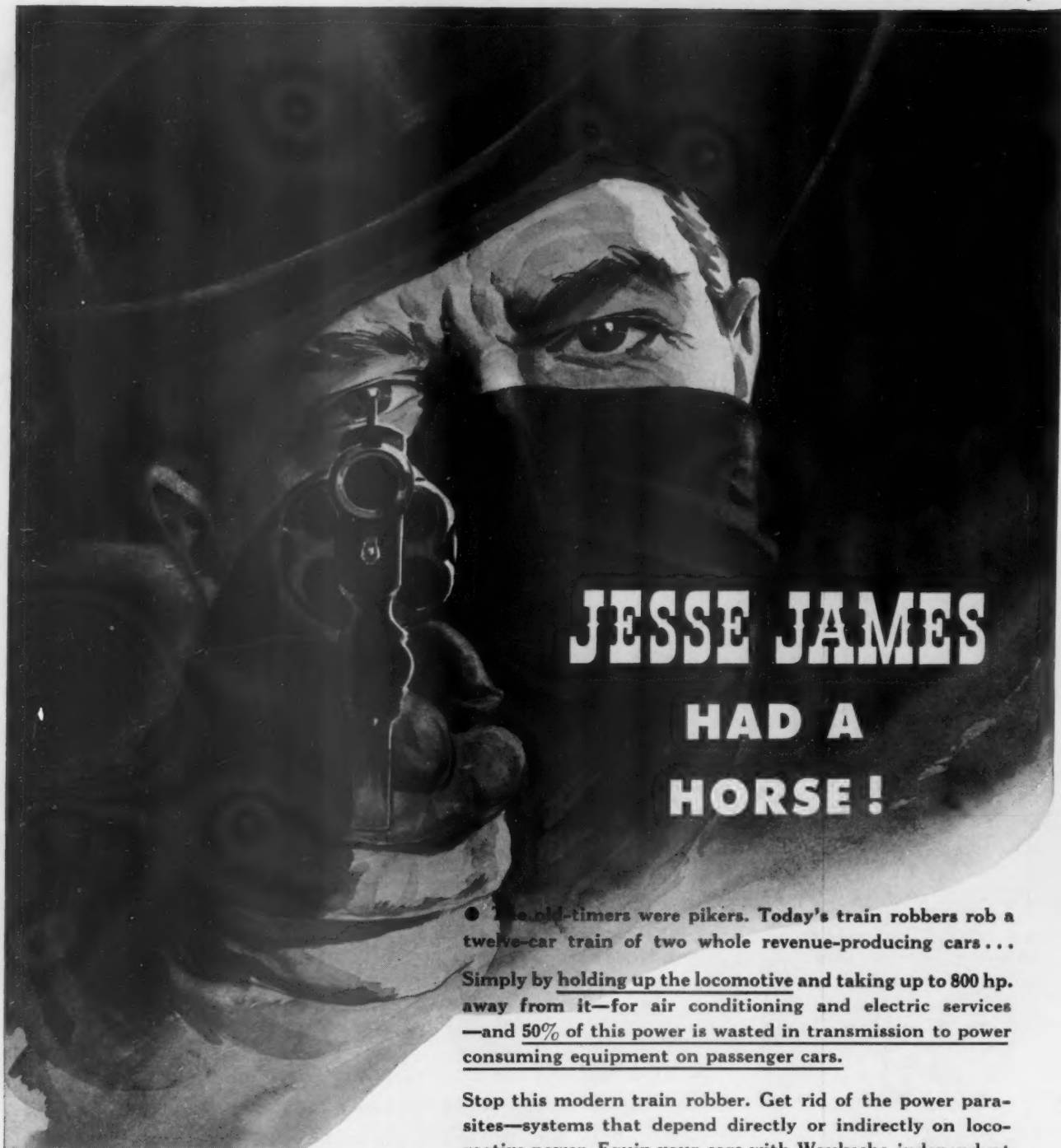
**GRIFFIN WHEEL COMPANY**

410 N. MICHIGAN AVENUE • CHICAGO 11, ILLINOIS

YAKOMA • LOS ANGELES • SALT LAKE CITY • DENVER • ST. PAUL • KANSAS CITY • COUNCIL BLUFFS • CHICAGO • DETROIT • CINCINNATI • BOSTON

(Join to the RAILROAD HOUR, NBC Network, Monday Nights)





# JESSE JAMES HAD A HORSE!

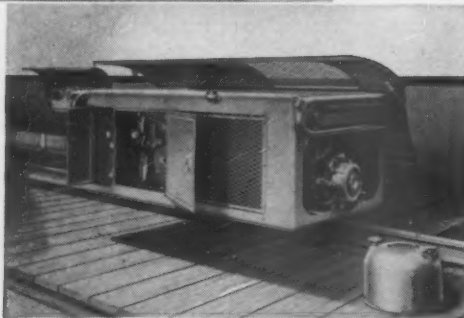
● The old-timers were pikers. Today's train robbers rob a twelve-car train of two whole revenue-producing cars...

Simply by holding up the locomotive and taking up to 800 hp. away from it—for air conditioning and electric services—and 50% of this power is wasted in transmission to power consuming equipment on passenger cars.

Stop this modern train robber. Get rid of the power parasites—systems that depend directly or indirectly on locomotive power. Equip your cars with Waukesha independent engine-driven air conditioning units and electric generating units.

There's no parasite load—all the locomotive's horsepower is available to pull the train. Waukesha engine-driven units completely take over—supply all the power for modern air conditioning, emergency heating, and all other electric services on demand, independent of locomotive, train movement, car location and standby service.

Get all the facts about Waukesha Diesel and Propane Engine-Driven Units. Send for bulletins.



Waukesha Diesel Enginator® on tubular track extension, withdrawn for general inspection

RAILWAY DIVISION • WAUKESHA MOTOR COMPANY • WAUKESHA, WISCONSIN  
Largest Builders of mobile, engine-driven Refrigeration and Generator Equipment

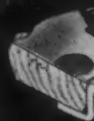
218



Fracture  
Separation

DOUBLE-FLANGE  
WELDED DOOR-FO

FLOOR LEVEL A  
HEIGHT KEEPS MO  
FROM SIDES

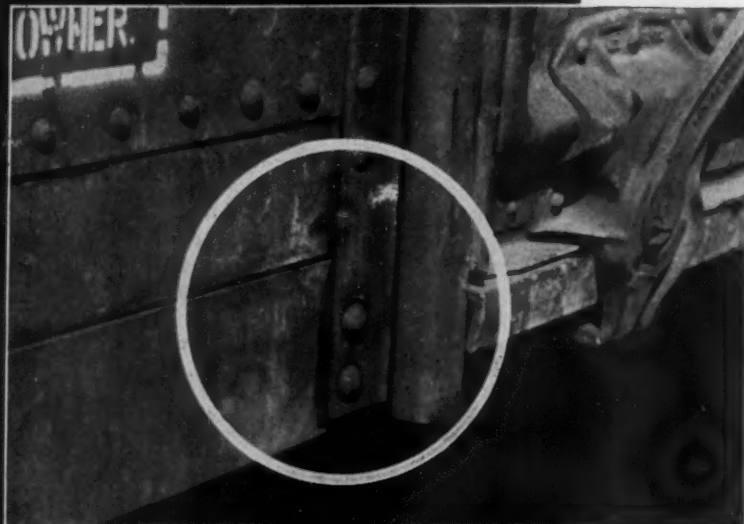


DOE-SILL UPPER E  
FORMS THRES  
PLATE IN DOORW

INTE

# International

NEW **PRECISION** IN FREIGHT CAR CONSTRUCTION

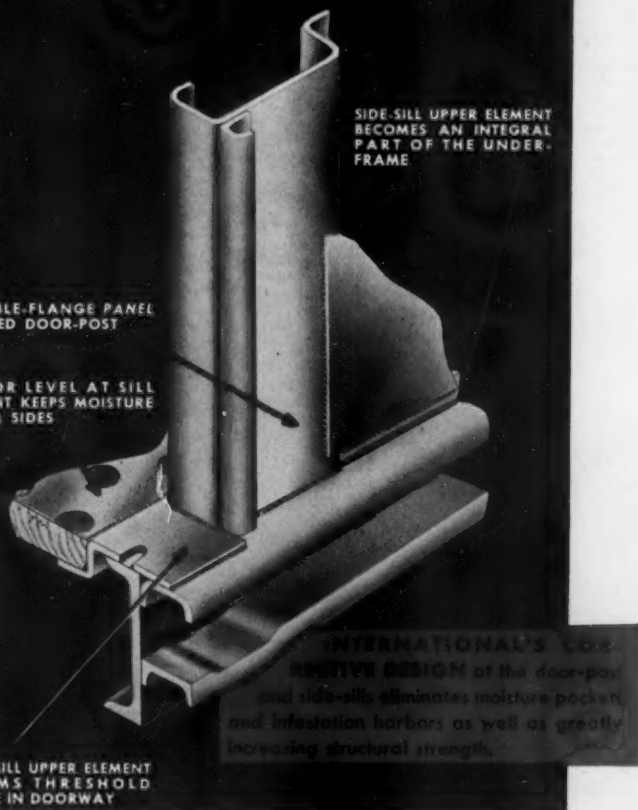


Fracture and Progressive Separation at Door Post.

SCHEDULES  
GET FASTER  
AND FASTER...

**NO ONE CONSIDERS HOLDING A SCHEDULE DOWN TO MATCH OUT-DATED CARS—THEY EXPECT CAR DESIGN AND CONSTRUCTION TO MATCH TODAY'S PACE!**

Progress is impatient—it has no use for those who lag behind. PROGRESS IS JUST WHAT THE NAME IMPLIES—and it will keep moving forward with a relentless pace. The only solution is to keep moving with it. *International Steel's new precision in design and construction is staying a step ahead!* Cars and components such as sides, underframes, doors, etc., designed or constructed by *International* will never hold down a schedule—nor will they be out of service for repairs due to inadequate design or out-dated construction! *An International car is on the line . . . all the time!*



SIDE-SILL UPPER ELEMENT BECOMES AN INTEGRAL PART OF THE UNDER-FRAME

DOUBLE-FLANGE PANEL WELDED DOOR-POST

FLOOR LEVEL AT SILL HEIGHT KEEPS MOISTURE FROM SIDES

INTERNATIONAL'S CORRECTIVE DESIGN of the door-post and side-sill eliminates moisture pocket and infiltration harbors as well as greatly increasing structural strength.

SIDE-SILL UPPER ELEMENT FORMS THRESHOLD PLATE IN DOORWAY

**INTERNATIONAL STEEL COMPANY** RAILWAY DIVISION  
EVANSVILLE 7, INDIANA



# There's NO Tail Swing with **HYSTAWAY!**



Because there's no tail swing—this Hystaway Dragline, mounted on a Caterpillar D-6 Tractor, makes possible digging close to railroad car without disrupting traffic.

## and that makes possible digging in closer quarters!

With the *Hystaway* you can dig right up against walls or other obstructions—in places where digging is impossible with shovels which must have "elbow room" to accommodate a swinging superstructure.

But whether you are digging close to obstructions—or out in open country—you always get full production with Hystaway. Only Hystaway offers: Full heavy-duty diesel tractor power; unimpeded crawler tractor mobility; mounting on *new* or *used* tractors; full production excavation and bulldozing with *one* piece of equipment... and compared to other shovels, can be used on more jobs. *Hystaway will put more profit into your operations!*

See your Caterpillar-Hyster Dealer, or write for Catalog 1235 to:

### HYSTER COMPANY

2932 N.E. Clackamas  
Portland 8, Oregon

1832 N. Adams St.  
Peoria 1, Illinois

#### HYSTAWAY®



There is no "tail swing" because the boom is the *only* part that revolves.

#### OTHER SHOVELS

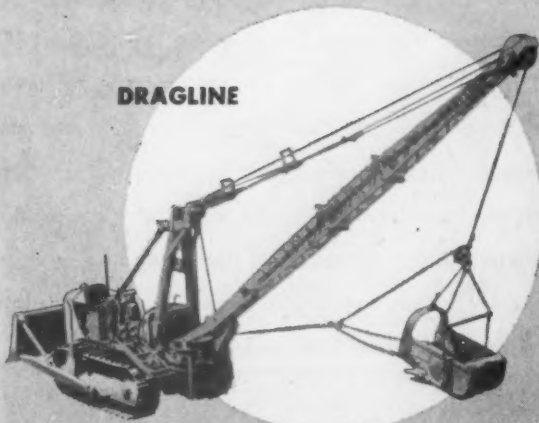


...require extra room because superstructure swings outside of track.



THERE'S PROFIT IN  
**HYSTER  
POWER**

## ONLY **HYSTAWAY** OFFERS ALL THESE MACHINES IN ONE!



**DRAGLINE**

1. DRAGLINE
2. SHOVEL
3. BACKHOE
4. CLAMSHELL
5. CRANE
6. PILE DRIVER
7. PLUS BULLDOZER



HYSTER COMPANY

FOUR FACTORIES: PORTLAND, OREGON; DANVILLE, ILLINOIS; PEORIA, ILLINOIS; NIJMEGEN, THE NETHERLANDS



**LE TOURNEAU-WESTINGHOUSE**  
**D Roadster Tournapull with E-9**  
 Carryall Scraper and Dozer Blade  
 shown here on ditching and sloping  
 work on the Rock Island R. R.

# Dedicated to Railroad Progress

No company is more closely identified with railroading than Westinghouse Air Brake Company, and we're proud of that relationship. For decades we've supplied the best in brakes and switch and signal equipment.

Now Le Roi Company and Le Tourneau-Westinghouse Company, with their products known and sold throughout the world, are a part of our organization.

Le Roi Company manufactures portable compressors, pneumatic tools, gasoline engines, and is famous for its Tractair, a combination tractor and air compressor, first developed by that company.

LeTourneau-Westinghouse Company is the pioneer of high speed, rubber tired scrapers, tractors and off-track maintenance equipment.

These products are valuable aids to your right of way maintenance problems.

We are ready to serve you.

**LE TOURNEAU-WESTINGHOUSE COMPANY, Peoria, Illinois**

**LE ROI COMPANY, Milwaukee, Wisconsin**

Subsidiaries of . . .

## Westinghouse Air Brake COMPANY

**EXECUTIVE OFFICES:**

**GATEWAY CENTER, PITTSBURGH 22, PENNSYLVANIA**



**See our exhibit**

**AT THE COLISEUM  
 IN CHICAGO  
 SEPTEMBER 14-17.**

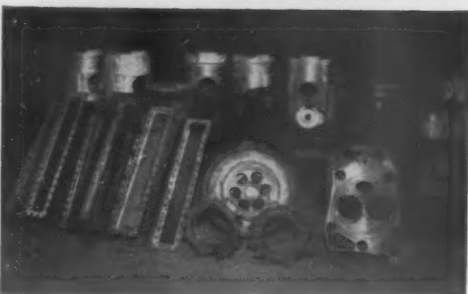


**LE ROI TRACTAIR**, combination  
 tractor and air compressor, makes it  
 easy to use compressed air for tie  
 tamping and other railroad jobs.





A HELIARC torch helps give an old coach a new look



You can use HELIARC welding to weld many parts in your shop

Save \$\$\$

Use HELIARC Welding to  
Build and Rebuild

Here are some jobs where HELIARC welding is used  
for fabricating and repairing:

Aluminum	Diesel Pistons
Bronze	Traction Motor Bearings
Cast Iron	Diesel Heads
Copper	Sheet Fabrication
Everdur	Fuel Tanks
HAYNES STELLITE Alloy	Wearing Parts
Magnesium	Loading Bridges
Mild Steel	Coach Roofs
Stainless Steel	Diner Equipment
Tool Steel	Bits

Many railroads use HELIARC welding to make and repair parts as diverse as Aluminum pistons and Zinc-lined motor bearings. . . \*

Why? Because HELIARC welding makes excellent welds in most metals. Because HELIARC welding is economical, too. It saves them thousands of dollars each year!

Your railroad can save \$\$\$, too. Ask OXWELD for more information.

\* Write for free booklets which describe how HELIARC welding is used by railroads and car builders.

The terms "Heliarc" and "Haynes Stellite" are registered trade-marks of Union Carbide and Carbon Corporation.

#### OXWELD RAILROAD SERVICE COMPANY

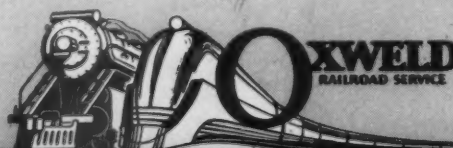
A Division of Union Carbide and Carbon Corporation



Carbide and Carbon Building Chicago and New York

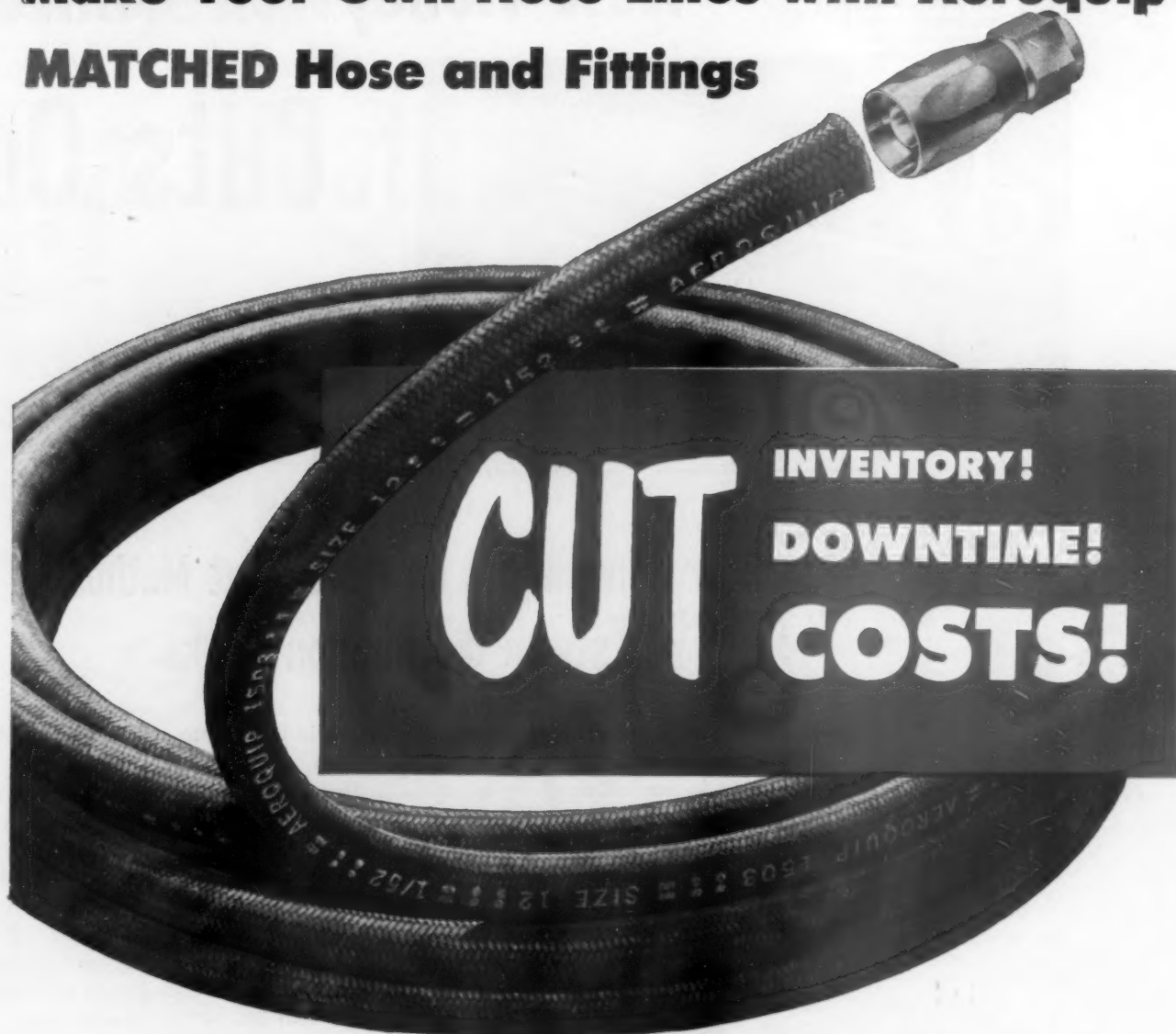
In Canada:

Canadian Railroad Service Company, Limited, Toronto



SINCE 1912—THE COMPLETE OXY-ACETYLENE SERVICE FOR AMERICAN RAILROADS

## Make Your Own Hose Lines with Aeroquip MATCHED Hose and Fittings



Aeroquip Fittings are designed, developed, and produced to go with Aeroquip Hose. They form such a foolproof combination that Aeroquip guarantees performance. Thus, the hose lines made right in your own plant always measure up to Aeroquip's exacting standards of quality, the highest in the industry. A small supply of Aeroquip Bulk Hose and Fittings assures you of quick hose line replacements at all times . . . and Aeroquip Fittings are detachable and may be used again and again when making new hose assemblies.

 **Aeroquip**

**AEROQUIP CORPORATION, JACKSON, MICHIGAN**

**SALES OFFICES:** BURBANK, CALIF. • DAYTON, OHIO • HAGERSTOWN, MD. • HIGH POINT, N. C. • MIAMI SPRINGS, FLA.  
MINNEAPOLIS, MINN. • PORTLAND, ORE. • WICHITA, KAN. • TORONTO, CANADA

AEROQUIP PRODUCTS ARE FULLY PROTECTED BY PATENTS IN U.S.A. AND ABROAD



# New Honeywell-Controlled Steam Heating System Cuts Cost of

**PRESSURE CAP...** Provides positive steam pressure to efficiently distribute steam heat through jet orifices.



**FREE-FLOW RETURN...** Speeds up heat circulation, prevents waterlogging of system.

**MEASURED JETS...** Properly spaced jet orifices the full length of the inner radiation tube provide even steam distribution the full length of the car.

## How Honeywell's new Multi-Jet Method of steam distribution works

Proper heat distribution, with outmoded car heating systems is nearly impossible to obtain—especially in mild weather. A condition called "heat pile-up" occurs, which wastes a lot of

steam, in addition to making the car uncomfortable.

The cut-away above shows how Honeywell's new Multi-Jet Distribution corrects this condition. Orifices are positioned in the inner radiation tubes and a *pressure cap* is placed at the end of the steam distribution tube to insure full-length radiation under all heating loads. This prevents "heat pile-up" and creates even heat distribution which greatly improves passenger comfort.

### How the Railroads Benefit from Competition!

Here is further tangible evidence of the benefits now accruing to the nation's railroads since Honeywell entered the railroad car heating field and opened competition for car heating business. These benefits are expressed not only in better ways to do old jobs, but in lower prices achieved thru competitive bidding.



### Moduflow Liquid System for new cars

For your new passenger cars we strongly recommend the Honeywell Moduflow Liquid Heating System. Its superiority on many counts is being recognized by more and more railroads. Full details on the Moduflow Liquid System will be sent upon request. Simply write Honeywell, Dept. RA-9-191, Minneapolis 8, Minnesota.

# Steam System

# of Car Heating 3 Ways!

- \* *Saves fuel*
- \* *Lowers maintenance*
- \* *Reduces road failures*

Many car heating systems in use today are wasteful of steam and labor. Faulty heat distribution causes this waste—and all efforts to correct it up to now have been largely unsuccessful.

Honeywell tackled this problem as a supplier to railroads—and as a normal competitive function—and developed a new, greatly simplified steam heating system for existing cars which solves the problem of high operating costs.

This new Honeywell-Controlled Steam System features Multi-Jet Distribution which spreads the heat evenly over the entire car. This greatly improves comfort for passengers—and results in these savings for railroads:

- Less under car piping, therefore less steam waste. In many instances the steam saving has been in excess of 40 percent over existing steam systems.
- Less maintenance because fewer valves and less piping are used in the Honeywell system; Multi-Jet steam distribution eliminates unnecessary duplication of equipment.
- Reduced road failures. Honeywell's dependable electronic control system and steam specialties stand up under tough railway operating conditions.

✱ **Act Now!** A Honeywell railroad specialist can show you how this new steam system can be easily installed on existing cars during normal car shoppings. He'll also tell you how you can take full advantage of the dependable Honeywell Electronic temperature controls, which feature Push-Button Inspection and open the door to even more savings in maintenance. Contact your local Honeywell office today for details!

MINNEAPOLIS  
**Honeywell**



*Transportation Division*

.....  
MINNEAPOLIS-HONEYWELL REGULATOR CO.  
DEPT. RA-9-191  
MINNEAPOLIS 8, MINNESOTA

Gentlemen:

Please send me complete details on the new Honeywell Steam System with Multi-Jet Distribution.

Name .....

Firm Name .....

Address .....

City ..... Zone ..... State .....





# SAFETY IS WORTHLESS

## HOW MUCH IS ABSOLUTE SAFETY WORTH?

There is no such thing as "a little bit safe!" "Absolutely safe" may cost a bit more, require a bit of extra effort to apply . . . but stop for a moment and consider the cost of *not* taking that extra bit of caution!

CRECO'S EQUALIZED BRAKE BEAM SAFETY GUARDS for new and existing trucks, both spring plank and spring plankless, assure you the *absolute* safety your road must demand!

UNLESS  
IT IS ABSOLUTE!

# CHICAGO RAILWAY EQUIPMENT CO.

C-3

332 SOUTH MICHIGAN AVENUE • CHICAGO 4, ILLINOIS

**NOW...**

**A. A. R. APPROVED**

(Conditional)



**The G-N  
Brake Beam  
safety support**

***gives extra safety in the brake danger-zone!***

The G. N. Brake Beam Safety Support, through sound engineering, dependable performance and easy installation, can prevent a derail due to brake beam or brake hanger failure.

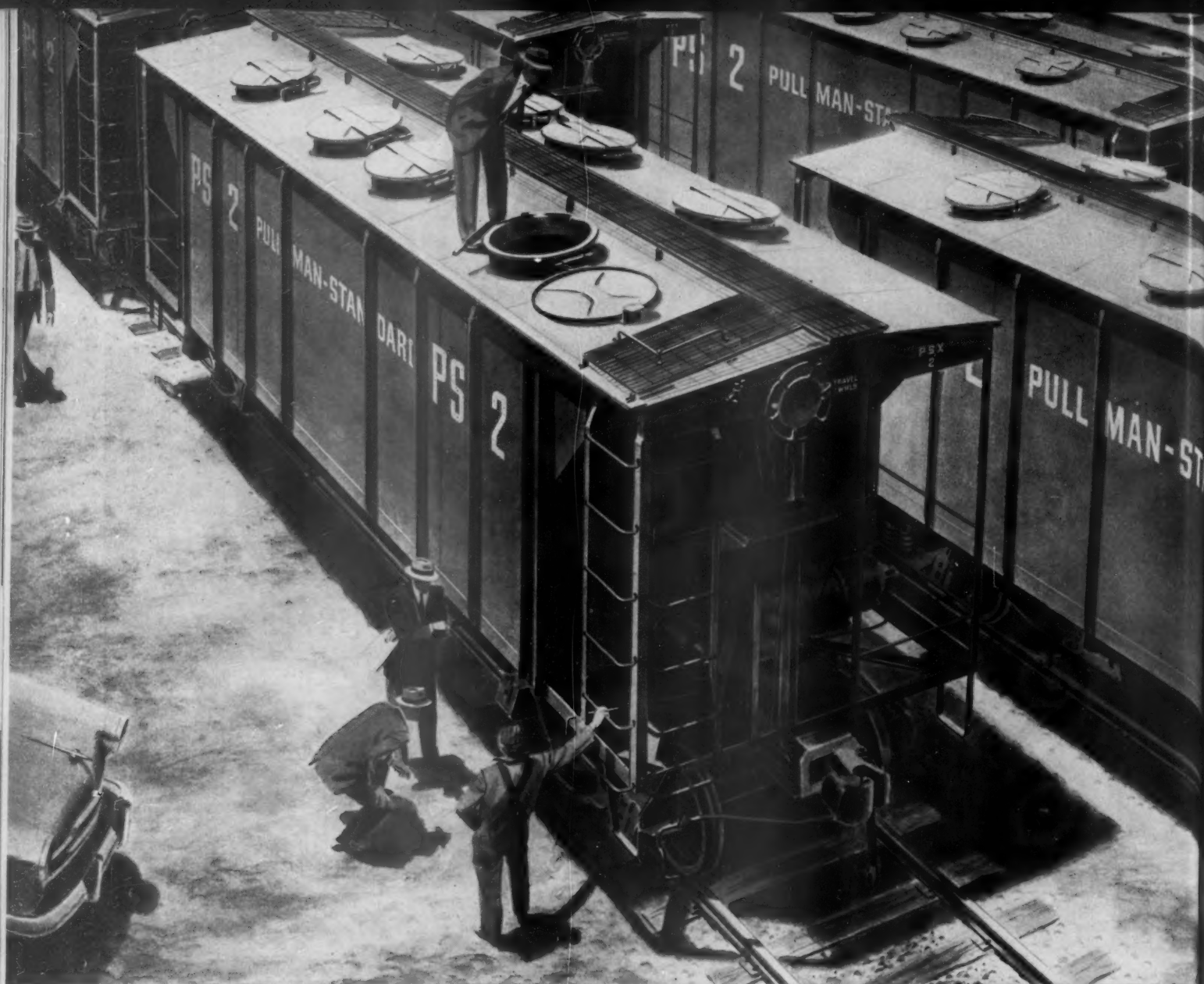
**GRIP NUT  
COMPANY**

- THE COMPRESSION AND TENSION MEMBER CONNECTING BRACKET ASSURES PROPER LOCATION OF SUPPORT AT TIME OF APPLICATION AND IN SERVICE
- Lightweight without sacrificing strength
- Adjustable to provide proper clearance over bolster
- No drilling, riveting or welding
- Easy to apply on loaded or empty car—NO NEED TO JACK CAR OR REMOVE TRUCKS
- Wheels can be removed without disturbing supports
- Attaches to brake beam only
- To remove brake beam, only one side of support need be detached

*Write for full particulars*

**310 S. MICHIGAN AVE., CHICAGO 4, ILLINOIS**





#### THE PS-2 COVERED HOPPER CAR

The PS-2 Covered Hopper Car represents another Pullman-Standard achievement in freight-car standardization for dependability and economy. The design is new, and production includes extensive use of automatic arc welding.

In addition to the sturdier construction, characteristic of standardized freight cars, some of the PS-2's features include: improved circular hatches; smooth self-cleaning hoppers; and a sturdier, safer roof.

#### NEW BOOKLETS

Anyone concerned with Covered Hopper Cars, Box Cars or Hopper Cars will be interested in the facts, specifications and details contained in these illustrated booklets. Write for a copy of any one or all three.



Like  
PS-  
and  
T  
qual  
T  
cont  
ized  
T  
fluen  
Sale  
Rese

The PS  
which  
cars. P  
neers h  
the stan  
roads' r  
laborat  
reprodu  
more se



# LOOK

## at these standardized cars

Like the PS-1 Box Car and the PS-3 Hopper Car, the PS-2 Covered Hopper Car is the result of tested design and continuous production.

This means that railroads are benefiting from top-quality freight cars produced more economically.

These standardized cars include the advantages of continuous production and the economies of specialized tools and techniques.

Their stamina and continual improvement are influenced by "on-line" checking by Pullman-Standard Sales and Service engineers and laboratory testing by Research and Development engineers.

Features of the new PS-2s are many: new all-around strength; special welded design that means quick, clean unloading with no material retaining ledges, projections or structural pockets; and new center pressure locking hatch covers, on the circular hatches, add weather protection.

PS-2 design allows this car to be adapted to a three or four-hopper car for the transportation of various bulk commodities.

1,405 PS-2 Covered Hopper Cars have been bought by ten railroads—an indication that standardized cars are a sound, revenue-building investment.

YOUR NEEDS CREATE THE PULLMAN "STANDARD"

# PULLMAN-STANDARD

CAR MANUFACTURING COMPANY

SUBSIDIARY OF PULLMAN INCORPORATED

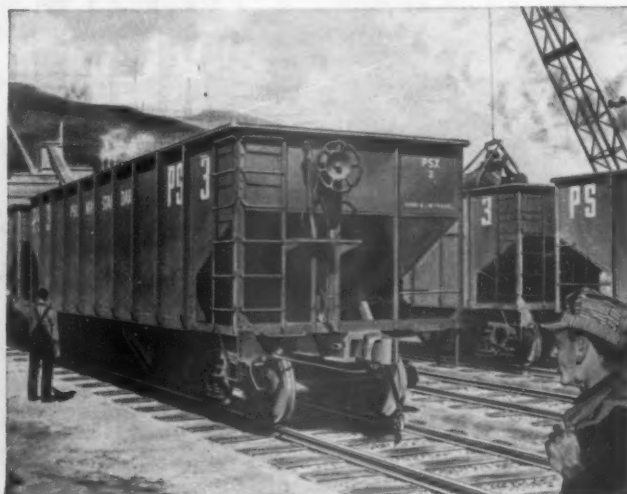
79 EAST ADAMS STREET, CHICAGO 3, ILLINOIS

BIRMINGHAM, PITTSBURGH, NEW YORK, SAN FRANCISCO, WASHINGTON



THE PS-1 BOX CAR

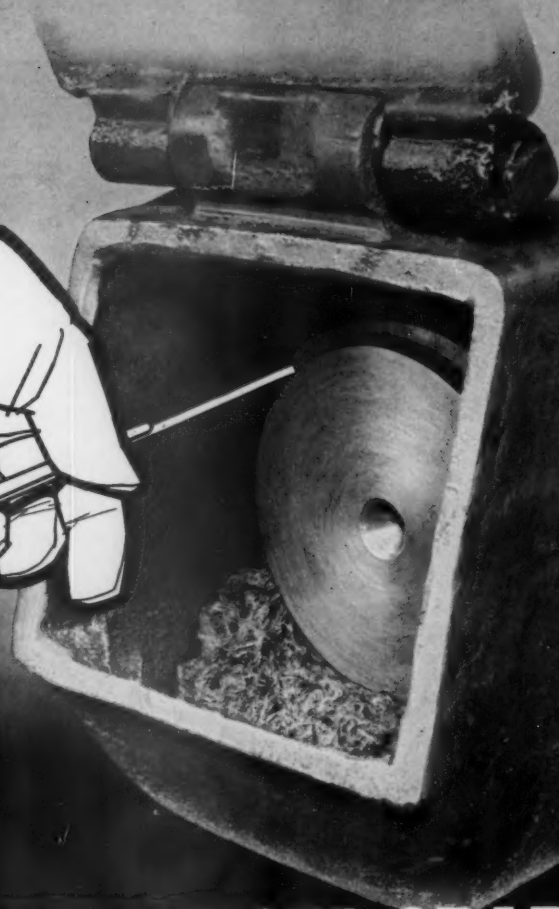
The PS-1 is a good example of the progressing standard which is so important in the successful operation of these cars. Pullman-Standard Research and Development engineers have never stopped testing, proving and improving the standardized PS-1. They continue to anticipate the railroads' needs for better, more economical freight cars. Under laboratory control, Research and Development technicians reproduce service hazards. The cars are subject to conditions more severe than those actually ever encountered.



THE PS-3 HOPPER CAR

The specifications of the PS-3 resulted from a thorough inspection of virtually every type of hopper car in service, and from a study of the effect, on the cars, of current handling practices. They incorporate proven advantages, omit potential trouble spots.

Among the objectives set for these cars were three which dictated welded construction: maximum strength at all vital points, maximum corrosion resistance, and smooth interiors for fast loading.



## CHECK FOR WASTE GRABS AND SPREAD LININGS

POSTERS ARE AVAILABLE ON THE FOLLOWING SUBJECTS:

Dirty Packing • The Heat Test • Displaced Packing  
• Waste Grabs and Spread Linings. Write for  
your posters and booklets today. They are free.

# NATIONAL BEARING DI

1330 MANCHESTER AVE., ST. LOUIS 10,



# use NBD better maintenance aids



Ask your National Bearing Representative—or write direct—about this new educational program consisting of Posters for your yards and Booklets for your men.

And they are all designed to knock the top off the hot-box curve! Of course, there are instructions on how to take care of solid journal bearings, but most of these make pretty dry reading for box packers, oilers, and inspectors. So National Bearing has prepared a booklet on Mr. Solid Journal Bearing which is interesting and easy to understand.

## they are free for your railroad

The four posters available for tacking up in your yards are similar to the one shown on the left hand page and act as constant reminders to your men to do a better job. Ask your National Bearing representative to show you the posters the next time he calls. He'll be glad to leave a copy of the booklet, "How to Take Care of Mr. Solid Journal Bearing," or write direct to National Bearing for samples.

### Service-proved facts about solid journal bearings:

- easiest to maintain • most liberal tolerances
- simplicity of design • lowest running friction • lowest cost
- lightest weight • standard for interchange



# DIVISION



10, MISSOURI

PLANTS IN: ST. LOUIS, MO., MEADVILLE, PA., NILES, OHIO, PORTSMOUTH, VA., ST. PAUL, MINN., CHICAGO, ILL.



## LADING DAMAGE INDEX

### Car Outbound

Mounted on short-travel coil springs

5000

10000

15000

Same Car Inbound  
Mounted on ASF Ride-Control Packages



3,085

# VISUAL PROOF

Detailed results of typical test run... Compare the  
"before and after" riding qualities of the test car!

### CAR OUTBOUND

27.9 Miles  
145,000 Lbs.  
AAR 1936 Coils  
56 M.P.H.

### Service Factors

Distance  
Rail Load  
Type Springing\*  
Maximum Speed

### SAME CAR INBOUND

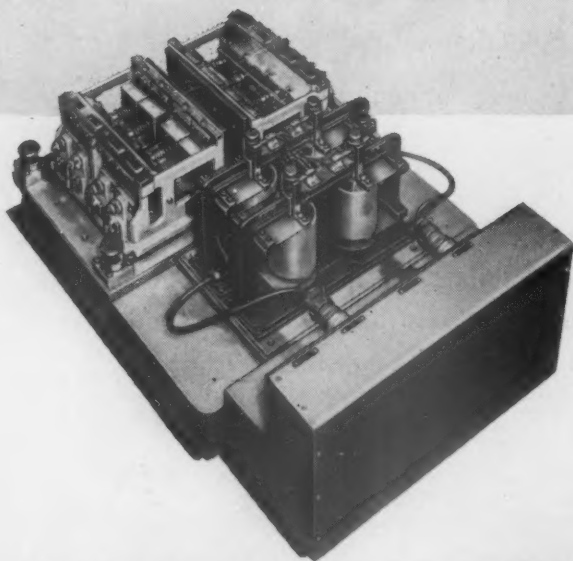
27.9 Miles  
145,000 Lbs.  
ASF Ride-Control Packages  
84 M.P.H.

### Actual Impact Count—and Lading Damage Index Factor

10,908	.25G	4894 x 1 — 4,894	2,699	.25G	2590 x 1 — 2,590
6,014	.50G	3631 x 4 — 14,524	109	.50G	100 x 4 — 400
2,383	.75G	1667 x 9 — 15,003	9	.75G	7 x 9 — 63
716	1.00G	716 x 16 — 11,456	2	1.00G	2 x 16 — 32
Lading Damage Index 45,877			Lading Damage Index 3,085		

(NOTE: Lading damage index reduced 93.3%. Discount the relatively harmless .25G impacts and the reduction is 98.7%, even though test car travelled 84 M. P. H. on the return trip!)

\*Approximate time required for change to Ride-Control Packages: 12 minutes!



## How the tests were conducted

Consist of ASF Test Train at Atlantic City was 2 identical 50-ton box cars, an "operations car" (with observation dome) and 2 passenger cars.

One box car was equipped with ASF Ride-Control Trucks. The other box car was mounted on AAR 1936 coils for the outbound run; for the return trip on the same track, it was remounted on ASF Ride-Control Packages.

Sensitive accelerometers (shown at left) were located at each end of each box car. They measured the lateral and vertical shocks, recorded in the operations car.



25000

30000

35000

40000

45,877

# of smoother freight hauls!

Take a freight car with short-travel coil springs  
...remount it on ASF Ride-Control® Packages  
...and the graph above shows how the lading  
damage index is reduced over 90%.

One of the fastest ways to cut lading damage claims is to bring *all* your freight cars up to modern riding standards... *credit old short-travel springs against an investment in ASF Ride-Control Packages*. The Atlantic City runs with the ASF Test Train prove how a quick changeover from 1936 coils to the Package practically revolutionizes the riding qualities of an otherwise identical car. Typical test results are shown at left.

And, smoother riding is only the most obvious reason why ASF Ride-Control Packages

quickly pay for themselves. Ask yourself how much rough riding costs your road in terms of frequent car repairs, higher maintenance of way, cars suitable for restricted use only. Then consider the economy of a general repairs program that includes giving your older cars riding qualities closely comparable to a brand-new car!

*Call your nearest ASF Representative—for the facts on how an investment in Ride-Control Packages can quickly be written off.*

Bring **YOUR** older cars up to  
modern riding standards...with



# ASF

## RIDE-CONTROL PACKAGES

**AMERICAN STEEL FOUNDRIES**

410 N. Michigan Avenue, Chicago 11, Illinois

Look for this MINT  MARK on the running gear you specify

Canadian Sales: International Equipment Co., Ltd., Montreal 1, Quebec





## ***where work's the hardest..***

... where loads are the heaviest ... crews the largest  
... that's where you'll find Fairbanks-Morse Motor  
Cars turning in records of performance, economy  
and safety.

Take the Model 53 for example. The capacity of this  
standard section car accommodates full crew and  
equipment for all track maintenance jobs, yet is light  
enough for a minimum crew to set-off and handle.

Hauling trailers of ties and track equipment is a heavy job.  
The Model 53, with its famous F-M air-cooled clutch, can  
start and pull these heavy loads without damage. Continued  
slipping in this clutch cannot cause overheating or damage.  
With either Chain Drive or V-Belt Drive,  
clutch wear is negligible.

Add the F-M performance-proved features of sturdy  
steel frame—four-wheel self-centering brakes—  
rugged, powerful two-cycle engine—grouped controls  
and full visibility—and you'll see why F-M motor  
cars set the standard of performance where the  
jobs are the toughest. Fairbanks, Morse & Co.,  
Chicago 5, Illinois.



# **FAIRBANKS-MORSE**

*a name worth remembering when you want the best*

RAIL CARS AND RAILROAD EQUIPMENT • DIESEL LOCOMOTIVES AND ENGINES • ELECTRICAL  
MACHINERY • PUMPS • SCALES • WATER SERVICE EQUIPMENT • HAMMER MILLS • MAGNETOS



## RAILROAD RADIO SIGNAL NOT AFFECTED BY 2000 FOOT-POUND SHOCK TEST

### One More Westinghouse Test Assures Equipment "Proved for Availability"

Here's just one way in which Westinghouse FE Railroad Radio is pretested for its ability to take rigorous in-service punishment, to resist severe coupling shocks.

At the Westinghouse Engineering Laboratory, East Pittsburgh, Pa., Type FE equipment, in continuously monitored operation, receives repeated blows from a 400 pound hammer. Impacts of 400 to 2000 foot-pound force are delivered to the sides, rear and top of the mounting plate. Average acceleration, shown by high-speed motion pictures, ranges from 30 to more than 300 G's!

Yet, Westinghouse Railroad Radio emerges without

damage—without service interruption—even from shocks that far exceed anything encountered in actual service. Reasons: the clean, engineered design of Type FE equipment . . . the careful placement of tested components within the aluminum chassis . . . valuable experience gained in over 60 years of servicing railroad needs.

Every element of Westinghouse Railroad Radio emphasizes dependability and highest availability in communications for your road. Write for full information to: Westinghouse Electric Corporation, Electronics Division, Communications Section, 2519 Wilkens Avenue, Baltimore 3, Maryland, or call your Westinghouse representative today.

YOU CAN BE SURE...IF IT'S **Westinghouse**

J-02269



**WHEN THE RAILROADS EVALUATE  
FREIGHT TRUCK PERFORMANCE**

**NATIONAL**  
**ALL-PURPOSE C-1 FREIGHT TRUCK**  
***FOR IMPROVED OPERATION***

**EXPERIENCE FROM 85 YEARS SERVICE TO TRANSPORTATION...**

**NATIONAL  
TECHNICAL CENTER**  
CLEVELAND

New centralized facilities to continue mechanical development...research...advanced testing...are creating marked interest to the carriers and related industry.



TE  
E  
**FOR THAT BETTER RIDE...**

**A PAY LOAD AT END OF THE RUN!**



### **THE RAILROADS WANTED TO KNOW**

Data from "ride-tests"  
by A.A.R.—1948-50 incl.—  
and statements of official observers  
are a matter of record.

Proof of design merit and the  
effectiveness of National C-1 Truck  
is through its broad recognition—  
based upon outstanding performance.



**WHERE  
SHOCKS  
FADE  
AWAY**

### **ENGINEERED FOR PROGRESS...**

**THE FRICTION-CONTROL UNIT** in the C-1 truck combines advanced  
engineering principles for progressive "on-rail" operation.

**THIS MECHANISM**, coupled with frame and bolster construction, is simple  
in design, with maximum desired control and truck alignment  
provided for. The rugged cast steel wedges, with large bearing areas  
positioned by low-stressed wedge springs against hardened  
steel plates, assures effective results with long life.

**SPECIAL DESIGN** of spring well, with large size cast lugs, provide proper position  
of load springs and prevent loss with today's faster speeds and heavier loads.

**ADDITIONAL DESIGN FEATURES** give distinct advantages  
of quick wheel change, easy assembly, minimum parts and visual inspection  
of friction-control unit.

A-7045

CIRCULAR 5150-A AVAILABLE

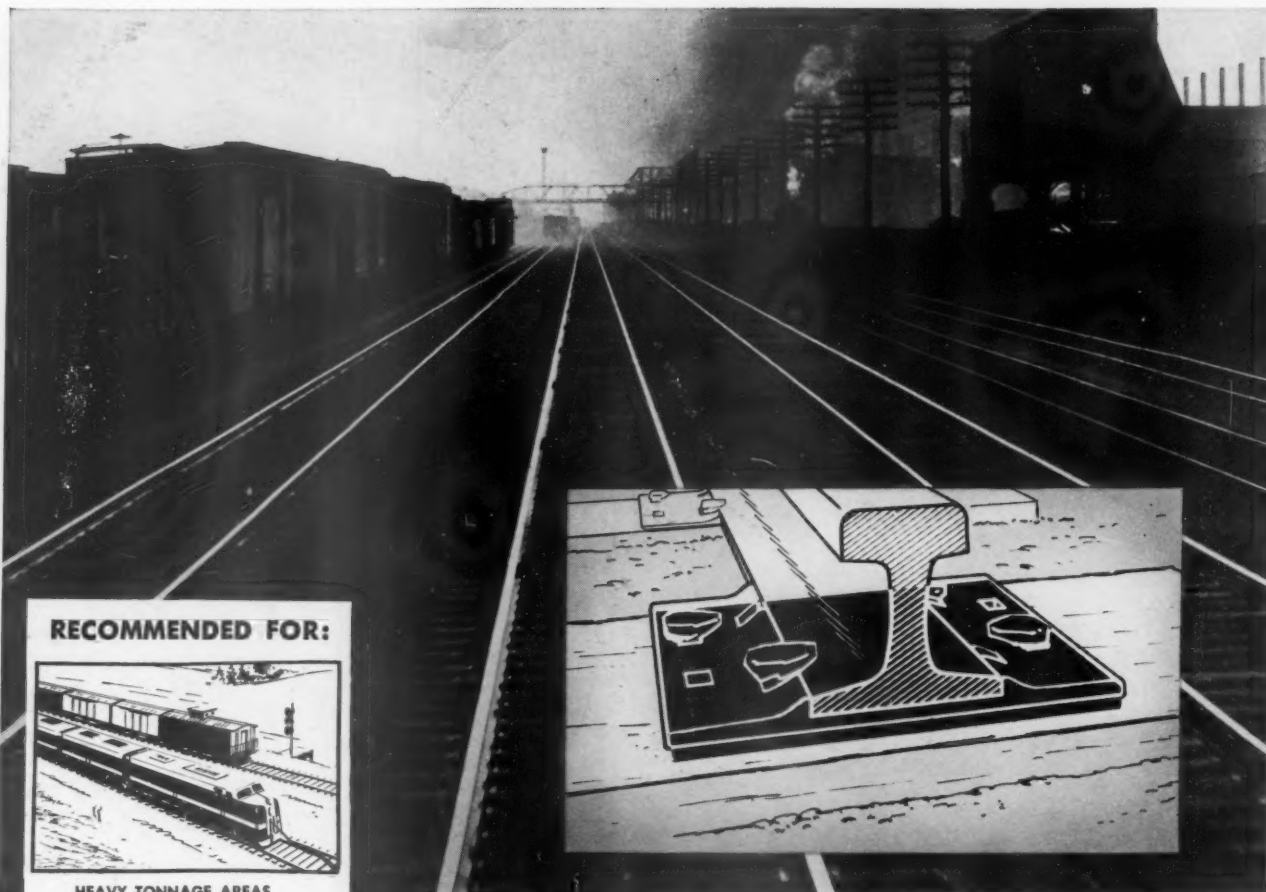
**NATIONAL MALLEABLE and STEEL CASTINGS COMPANY**

Cleveland 6, Ohio

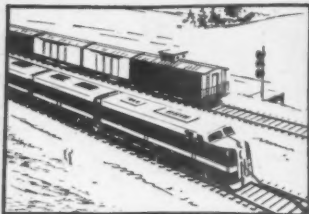
COUPLERS • FREIGHT TRUCKS • YOKES • FRICTION AND RUBBER DRAFT GEARS • JOURNAL BOXES AND LIDS







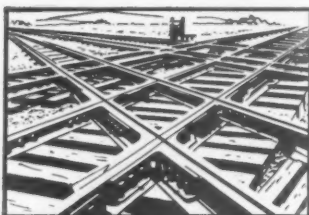
**RECOMMENDED FOR:**



**HEAVY TONNAGE AREAS**



**CURVES, TRESTLES AND BRIDGES**



**CROSSINGS, INSULATED JOINTS**



**THROUGH STATION AREAS**

## *Lengthen Tie service life*

### **with Johns-Manville Tie Pads**

- ... prevent tie cutting
- ... cushion track structure

BECAUSE they reduce cutting, abrasion and the action of moisture, Johns-Manville Tie Pads protect your tie investment... help cut maintenance costs. This is especially important in heavy service areas where tie replacement is a serious recurrent problem.

Designed to prolong tie service life, J-M Tie Pads reduce "pumping," track spikes stay tight longer, postponing maintenance expense for regauging and respiking. Resilient, they serve as durable protective cushions, seal out dirt and moisture, prevent abrasion and cutting. J-M Pads absorb impact shock,

help isolate the transmission of noise and vibration.

J-M Tie Pads are formulated to offer low compressibility, high recovery, low plastic flow, good resiliency and flexibility over the widest temperature ranges encountered in service. These pads are resistant to creosote, diesel and lubricating oils, brine, water and freezing and thawing.

**Available in all standard sizes,** J-M Tie Pads are furnished uncoated or with a special asphalt adhesive coating on one side. For detailed information on Tie Pads or other Johns-Manville products get in touch with your J-M Representative, or write Johns-Manville, Box 60, New York 16, N. Y.



## **Johns-Manville**

**95 YEARS OF SERVICE  
TO TRANSPORTATION**



**Yale Electric Trucks give safe handling  
... cut costs as much as 75%**

DIFFERENT LOADS call for different equipment—and the comprehensive YALE line offers exactly the truck your job requires, whatever your business may be.

To keep down maintenance costs and assure 24-hour service, YALE Trucks offer such special features as: Hypoid Gears, Involute Spline Drive Shafts, and Yale Lift

Channels. As a result, YALE users report unusual savings—with handling costs often reduced as much as 75%.

Choose the truck you need from YALE's wide variety of models, including Gas, Diesel, LP-Gas, Gas-Electric, and Electric in capacities up to 100,000 lbs. Attachments available for specialized handling jobs.

# YALE\*

## MATERIALS HANDLING EQUIPMENT

\*Registered in U. S. Patent Office

MAIL THIS COUPON TODAY

The **YALE & TOWNE** Manufacturing Co., Dept. 489  
Roosevelt Blvd. and Haldeman Ave., Phila. 15, Pa.

Please send my free copy of *Picture story of  
Yale Materials Handling Equipment.*

Company \_\_\_\_\_

Name \_\_\_\_\_ Title \_\_\_\_\_

Street \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_

In Canada write: The Yale & Towne Mfg. Co.,  
St. Catharines, Ontario, Canada

**Gas, Electric, Diesel Lift Trucks • Worksavers • Hand Trucks • Hand and Electric Hoists • Pul-Lifts**





**STANDARD HD**  
TRADE MARK  
**OIL**

## ...on more than 70 U.S. railroads

**Wide acceptance** of STANDARD HD by railway diesel operators is one proof of the ability of this superior diesel-engine lubricant to reduce costs and maintenance. STANDARD HD has been adopted for all types of service—heavy freight haulage, fast passenger runs, or switching. All makes and models of diesel engines are successfully lubricated with STANDARD HD.

You will get the greatest possible engine cleanliness and economy by the use of STANDARD HD on diesel equipment.

You can count on STANDARD HD to help you keep diesel-engine maintenance and operating costs low. Standard Oil Company (Indiana), 910 South Michigan Avenue, Chicago 80, Ill.

**STANDARD OIL COMPANY**



(Indiana)

## Current Publications

### BROCHURE

**YOUR FILM CAN REACH 1,000,000'S FOR 100'S VIA PFC-TV.** Princeton Film Center, Inc., Princeton, N. J. Free.

This brochure offers to sponsors of 16-mm. promotion films opportunities for television showings of their films on free "public service" TV programs. A complete description of services offered, including scientific audience measurements, is incorporated in the study. Actual case histories are included, showing stations and audiences reached by typical films.

### PAMPHLETS

**RDC COMES OF AGE.** 24 pages, illustrations, drawings. Budd Company, Philadelphia 32, Pa. Free.

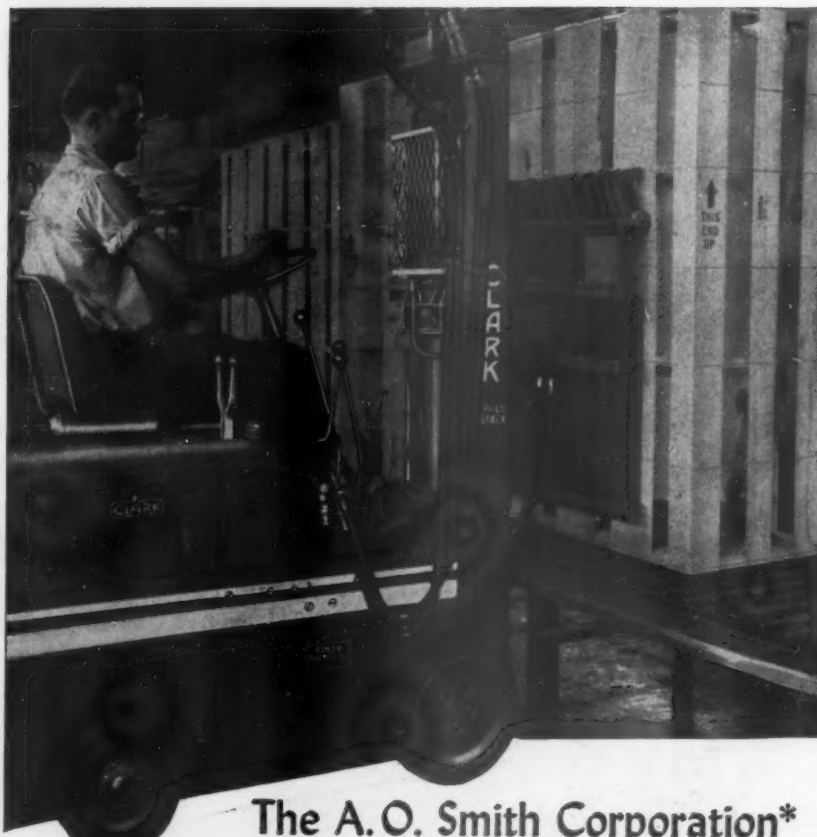
This brochure is written three years after the first RDC'S went to work on the Boston & Albany division of the New York Central. There were two cars, and they operated over the 98 miles between Boston and Springfield. Since then, more than a hundred RDC's have compiled millions of miles of experience. This is a report on their performance, reliability, economy and traffic building features. It also explains what makes them tick—their power, transmission, speed, and maintenance. It includes performance charts, and floor plans and side-elevation drawings of each of the four types of RDC's.

**EUROPE AND HER TRADE FAIRS.** 32 pages, illustrations. European Travel Commission, 295 Madison ave., New York 17. Free.

Designed to acquaint U.S. businessmen with the growing importance of these fairs, at which millions of dollars worth of orders are placed annually, this booklet contains detailed descriptions of 18 of the major fairs of 1953. Also included are dates; number and types of exhibitors; exhibition facilities; attractions of cities in which the fairs are held, and addresses of representatives in North and South America. The European Travel Commission, representing 21 Western European countries, is distributing the booklet as part of its program to help further friendship and progress through travel between U.S. and Europe.

**PLANNED INDUSTRIAL DISTRICTS: THEIR ORGANIZATION AND DEVELOPMENT.** 56 pages, illustrations, maps. Technical Bulletin No. 19, Urban Land Institute, 1737 K st., N.W., Washington 6, D.C. \$5.

Planned industrial districts, attractively laid out with landscaping, street plans, and proper access offer many advantages to cities and manufacturing concerns, the Urban Land Institute reports. Industrial districts—the industrial equivalent of planned residential neighborhoods—provide protected facilities for industry and eliminate many manufacturing nuisances. As a result, properly planned districts are



## The A. O. Smith Corporation\* **SAVES \$108,000 a YEAR** in materials handling!

This is what the A. O. Smith Corporation accomplished:

**1** Saved 43,300 man-hours or \$78,000 a year in shipping and warehousing.

**2** Minimized breakage and damage to crates, saved \$30,240 a year on repair labor.

**3** Eliminated 4000 double-faced pallets costing \$16,000.

**4** Accomplished a 30% reduction in required storage area—crates are exactly-positioned in neat rows, two, three and four high.

**5** Cut boxcar loading time in half—one car is fully-loaded in one hour flat, by one man.

**6** Eliminated hazardous difficult labor—all lifting is done mechanically.

WITH A SPECIAL "FINGER-LIFT" device for crate-handling, combined with a side-shifter attachment for their fork trucks, the A. O. Smith Corporation not only reduced labor costs \$108,000 a year—they also eliminated \$16,000 worth of pallets and made available 27 men and 3 trucks for other work!

As usual, CLARK plays a major role in this amazing savings achievement. Admittedly, not everyone can save \$100,000 a year with modern handling equipment; but by the same token, you might save more, depending on the nature of your handling problem. Why not find out what's in it for you? Simply ask your CLARK Dealer to analyze your own particular handling activities. Don't pass up this opportunity for *really big savings!*

\* Permaglas-Heating Division, Kankakee, Illinois  
Detailed case history available on request.

### CLARK ELECTRIC AND GAS POWERED FORK TRUCKS AND POWERED HAND TRUCKS • INDUSTRIAL TOWING TRACTORS

INDUSTRIAL TRUCK DIVISION • CLARK EQUIPMENT COMPANY • BATTLE CREEK 24, MICHIGAN

Please send: ☐ Case History ☐ Material Handling News  
☐ Have Representative Call.

Name \_\_\_\_\_

Firm Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

Zone \_\_\_\_\_ State \_\_\_\_\_

AUTHORIZED CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS





emerging as a superior type of manufacturing area in cities throughout the country, with increasing interest being shown by municipal officials in having them established. Part I of this study defines industrial districts, and Part II covers in detail 10 industrial districts developed by private developers, civic organizations and public bodies. Included is the Airlawn Industrial District developed in Dallas, Tex., by the Missouri-Kansas-Texas. A number of other developments are mentioned briefly, and the study concludes with a list of nearly 60 industrial districts in 23 states.

**BULLETIN NO. 86.** 176 pages, illustrations, drawings. Railway & Locomotive Historical Society, Baker Library, Harvard Business School, Boston, Mass. \$2 to members; \$3 to non-members.

In this bulletin there appears the first of a four-part non-technical history on design and operation of locomotive valve gears. There is another of the Newton papers on the Aurora Branch, one of the pioneer railroads that make up the present Burlington System; papers on the Adirondack Railway, the Richmond & Alleghany, and the New Jersey Railroad & Transportation Co.; and a discussion of gages—standard and otherwise. Additions and correc-

tions to locomotive rosters of Florida railroads, which appeared in Bulletin No. 86, are also included.

**THE UNION CONTRACT CLAUSE FINDER,** by the staff of Employee Relations Bulletin, 91 pages and loose-leaf, three-ring binder. National Foremen's Institute, Inc., New London, Conn. \$7.50.

Based upon a painstaking analysis of 3,000 union contracts, this publication presents the thinking of outstanding labor negotiators in the country on contract clauses which repeatedly show up in management-union negotiations. It contains not only sample clauses, but a clear and balanced commentary on aims of both management and labor in the bargaining process. The background for today's labor negotiations is set out in the opening section, called "The Legal Duty to Bargain." In this concise review of current labor legislation, rights and obligations under law of both parties are clearly set forth. Succeeding sections follow a standard pattern. First comes a general discussion of the problem. Then, under appropriate sub-headings, are presented specific contract items with clause which have been selected because they will work, be acceptable to unions, and protect prerogatives of management.

**APPLICATIONS OF ELECTRICITY TO RAILWAYS, 1952.** Prepared by Edmund A. Freeman. 40 pages. Library, Bureau of Railway Economics, Association of American Railroads, Transportation bldg., Washington 6, D.C. Free.

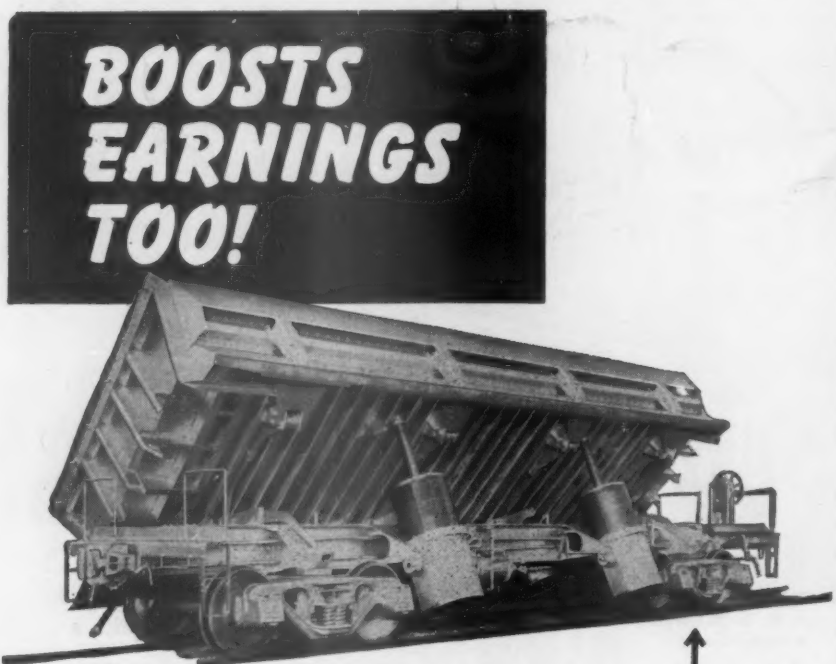
A bibliography of articles on railroad electrification, diesel-electric and electric locomotives, and electrical apparatus and equipment appearing in a selected list of periodicals. Bibliographies on communications and signaling appear in appendices.

**A YEAR BOOK OF RAILROAD INFORMATION, 1953 Edition.** 96 pages. Eastern Railroad Presidents Conference, 143 Liberty st., New York 6. Free.

The 1953 edition presents a summary of railway operations in 1952. For purposes of comparison, figures are given for a number of preceding years, with average annual figures for five-year periods. The figures, with few exceptions, deal with Class I railroads. Separate figures for Eastern District roads have been added this year.

**A PROGRAM FOR EXPANDING JOBS AND PRODUCTION.** 28 pages. Economic Research Department, Chamber of Commerce of the United States, Washington 6, D.C. Single copies, 50 cents; quantity discount.

This report discusses the economic problems ahead and suggests both private and governmental steps to be taken to maintain prosperity and an expanding economy.



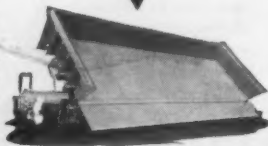
The Differential Air Dump Car has a way with operating expenses — cuts 'em down!

There's another pair of massive muscles on the other side of the car, too, means two-way dumping and greater flexibility.

They're built to take rough treatment — whether it's the slam-banging of the clam or the sudden dumping of tons of hot slag. These cars can take it and can come back faster for more.

Higher ratio of payload to dead weight! Fewer trips to the shop and shorter stays when they do go! Add all these up and it spells lower operating costs — another way to say "Boosted Earnings". Write for the full story on these cars.

↑  
**DUMPS  
BOTH  
WAYS**  
↓



Other Differential Products: Locomotives, Mine Cars, Mine Supply Cars, Rock Larries, Mantrip Cars, Dumping Devices and Complete Haulage Systems.

**DIFFERENTIAL STEEL CAR COMPANY**

FINDLAY, OHIO

SINCE 1915 — PIONEERS IN HAULAGE EQUIPMENT

an M-F car is a Maintenance Free car

# M-F

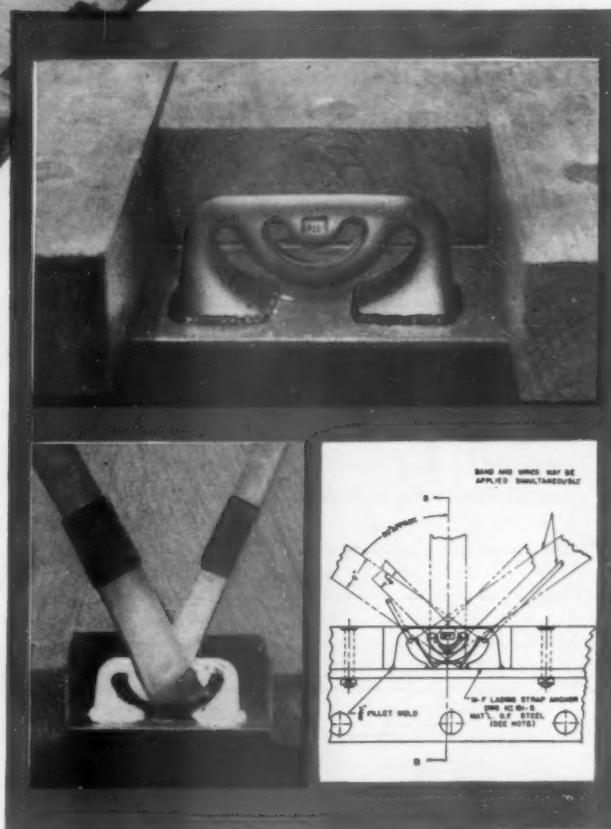
## FLAT CAR LADING STRAP ANCHOR



NOW THERE'S AN M-F LADING STRAP ANCHOR FOR FLAT CARS! For new decking or redecking after January 1, 1954, specify the M-F FLAT CAR Lading Strap Anchor—you *have to have the anchor, you might as well specify the best!*

- M-F gives you a full bearing surface at any angle through 120°!
- M-F gives you a large base providing enough welding for *double* the strength of 2" strapping!
- M-F gives you an anchor that will accommodate 1½" or 2" strapping, or wire or cable or any combination!
- M-F gives you an anchor that will take *two* straps at one time without friction, binding or buckling!

To DECK or RE-DECK—Check "M-F" on your "Spec"



### MACLEAN-FOGG LOCK NUT COMPANY

5535 N. WOLCOTT AVENUE • CHICAGO 40, ILLINOIS • In Canada: THE HOLDEN CO., LTD. • MONTREAL





# SAFE DELIVERY ON SOUND PENTA-TREATED LUMBER

DOW wood preservative checks rot and decay,  
adds years of dependable service to car lumber



The Dow Chemical Company  
Dept. PE 3-3A5, Midland, Michigan

Please send me:

- ☐ List of PENTA treating plants.  
☐ I am interested in the application of PENTA to \_\_\_\_\_

Name \_\_\_\_\_

Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

PENTA\*-treated flat-car beds are good insurance against cargo damage caused by rotted and decayed lumber.

Blocking and other fastenings attached to untreated beds often fail unexpectedly, causing cargo to shift and become damaged. You can guard against failure of this kind and save money doing it by treating flat-car beds, siding, framing and all car lumber with *clean* PENTA.

PENTA protection means fewer trips to the repair shop for lumber replacement and greater ton mileage for every dollar invested in wood car construction.

Over 60 suppliers can furnish you with PENTA-treated lumber. Ask your supplier about *clean* \*PENTachlorophenol, or write THE DOW CHEMICAL COMPANY, Midland, Michigan.

you can depend on DOW CHEMICALS



# Remington Rand Methods News

**NOW... a complete choice of methods for reproducing every kind of railroad document**

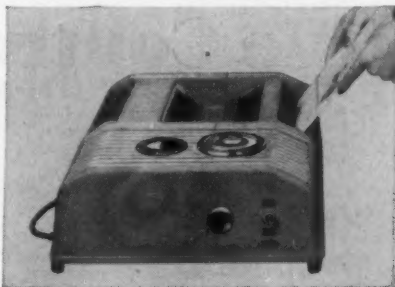


**Efficient microfilming at new low initial cost**

You can speed train movements by recording waybills for an entire train in a few minutes...apply modern microfilm methods to payroll, revenue, claim and other smaller volume accounting jobs with this new low-cost machine.

The Model 4 Film-a-record is the latest in the line of business photographic equipment offered by Remington Rand. It has an operating speed of up to 1500 exposures an hour. Features like the visual film supply indicator, warning signal and foot switch make this machine an outstanding value.

See how you can do many jobs faster, cut operating expense and get all the space-saving advantages of modern microfilming methods at a new low cost. Send for **F356**.



**Daily interchange report now produced in seconds**

You can convert a Wheel Report to an Interchange Report of Cars in less than one minute. Just mask the heading of the Wheel Report and photograph it with the new interchange heading in the amazing Transcopy Duplex machine. It exposes, develops and delivers a positive copy...in seconds. Requires no darkroom, no running water, no messy trays, no washing or drying time. Ask for **P344**.



**Copying at point-of-use with speed and economy**

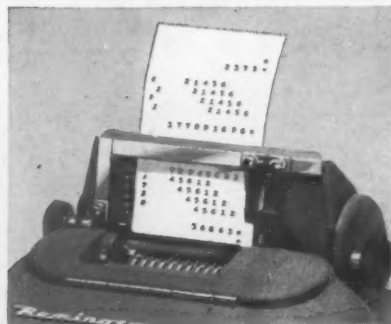
You can save time and gain accuracy in handling statements of differences...tracing unreported tickets...preparing I.C.C. samples of carload waybills...and interline abstracting. See how a well-known railroad uses Record Dextragraph, which can be rolled from department to department for fast and flexible copying methods. Ask for **SN827** and **D286**.

**Two valuable aids for many duplicating jobs**

Multiple copies of abstracts, waybills, reports, freight bills, train sheets, inventory control and other vital records needed to meet the tight schedules demanded by today's efficient railroad administration may all be quickly produced mechanically—with big savings over manual methods.

Where the job calls for spirit duplication, you can depend on Rem-Masters. All the necessary copies are reproduced speedily with this clean, easy-to-handle Master Unit. Available in plain units, or with your own form embossed for perfect registration. To learn how you can save money with versatile Rem-Masters for every hectograph need, send for **RSM227**.

For offset duplication, you'll get better copies faster, with Remington Rand Plastiplates. Any clerk can prepare the copy on Plastiplates. A smooth "no-grain" surface allows easy typing or drawing and gives a long, uniform run of faithfully reproduced copies. And, with Photographic Plastiplate, you are assured of the highest quality halftone reproductions. Circle **DS62**.



**Rapid figuring saves valuable clerical time and increases efficiency**

Many railroads find the Remington Rand Printing Calculator an indispensable tool for fast figure production in connection with waybill and freight bill extensions. Short-cut multiplication makes possible rapid computation of quantity times rate plus tax in one continuous operation.

You get the combined advantages of automatic division, short-cut multiplication, lightning fast addition and subtraction, plus *printed tape proof of accuracy*...all in one machine. It means faster prorating of expenses to departments, payroll preparation, statistical reporting and tax return compilation as well as many other routine railroad office operations.

The Printing Calculator's 10-key keyboard is so simple to master, that touch method operation comes with ease—in minutes—to any competent office worker. It's a real time-saver in general accounting, agency, terminal, and yard offices. Ask for calculator idea-booklet **AC639**.

## Remington Rand

Management Controls Reference Library  
Room 1162, 315 Fourth Avenue, N. Y. 10

Please circle literature desired:

**F356 P344 SN827 D286**

**RSM227 DS62 AC639**

Name \_\_\_\_\_

Title \_\_\_\_\_

Railroad \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

RR-3

— Profit-Building IDEAS For Business —





## **Retire Trackage and Save . . . with G-R-S Centralized Traffic Control**

By installing G-R-S cTc you can convert to single track, or eliminate many sidings. You will still retain adequate capacity for future traffic expansion.

The salvage of rails and ties pays for a large part of the changeover. You reduce expensive track and roadway maintenance.

Investigate the possibilities on your road to economize with cTc. Ask your G-R-S district office for studies and estimates.



# **GENERAL RAILWAY SIGNAL COMPANY**

230 Park Av.

122 S. Mich. Av.

Main Office

611 Olive St.

NEW YORK 17

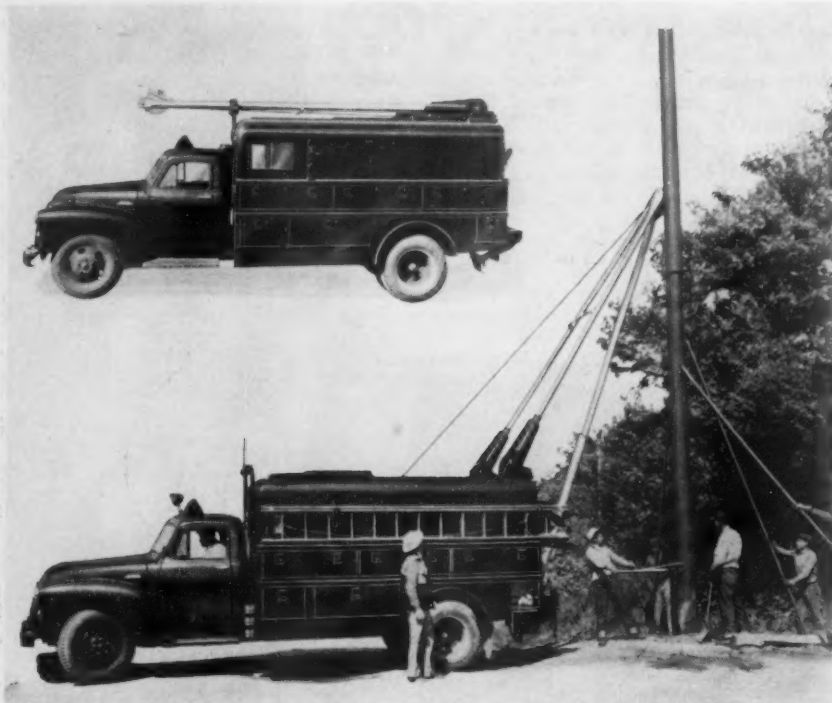
CHICAGO 2

ROCHESTER 2 N. Y.

ST. LOUIS 1



## What's New in Products



### Truck Derrick

A truck-mounted power-operated derrick that is self-raising and self-stowing has been announced by J. H. Holan Corporation, Cleveland. Designated Series 3100, the derrick is hydraulically positioned and it is claimed that it can be set up for work or stowed away by one man in 2 or 3 min. It is designed to be permanently mounted on top of a utility body, yet it leaves clear working and loading space within the body.

The side legs of the new derrick are secured in heavy swivel bearings on top of channel sections at the rear of the body. Each has a sprocket geared to a heavy chain which is driven by a powerful hydraulic cylinder to swing the derrick up into working position or back into its overhead stow position.

The hydraulic system is controlled by two levers conveniently located just above the rear platform, on the right side of the body. The hydraulic cylinders are used only to swing the derrick in or out, and do not take any of the lift load, which is transferred directly to the truck frame by the heavy channel supports.

The adjustable center leg, with sheave, is permanently assembled with the side legs and requires no dismantling when not in use. When fastened to the footplate on the rear platform, or used with a special ground plate as a "stiffleg," it can be adjusted to several lengths.

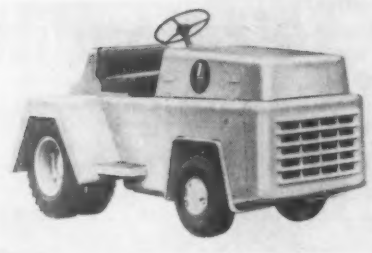
Working capacity of the derrick is from 3,000 lb. fully extended to 7,000 lb. in the short-reach position. With the third leg on the ground a 10,000-lb. straight pull can be exerted •

### Station Paint

The E. I. DuPont de Nemours & Co., Wilmington, Del., has announced development of a line of high-gloss, chalk-resistant, exterior finishes for application to railway stations, tool houses, and other structures. Tests conducted on stations over a period of one to three years in various locations are said to have demonstrated the superior gloss retention of the new synthetic finishes. The new "Dulux"

Railway Station finishes are said to have a decidedly lower chalk rate so that the possibility of chalk pick-up by passengers' clothes is minimized.

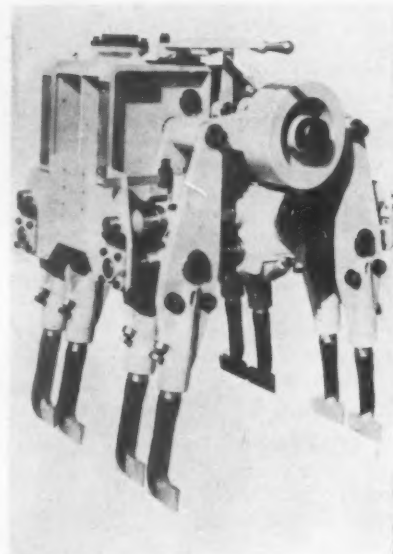
The new finishes may be brushed or sprayed on and have a spreading rate of 500 to 600 sq. ft. per gal. It is stated that these finishes dry to the touch in 2 or 3 hours and may be re-coated after drying overnight. In addition to normal wood surfaces, they may also be applied over metal, cinder-block, cement and brick •



### Wheeled Tractor

A new tractor, the Model TC-60 "Payloader," has been introduced by Frank G. Hough Company, Libertyville, Ill. Mounted on pneumatic tires, this tractor has a drawbar pull of 6,000 lb., but is compact—being less than 5 ft. high and 10 ft. long. Its turning radius is 10 ft. 1 in.

Among the features cited for this new unit are: Easy maneuverability; a torque-converter drive coupled to a full-reversing two-range transmission; a forward-speed range from 1.6 to 16.9 m.p.h. and a reverse-speed range from 1.8 to 19.0 m.p.h.; 6-cyl. 67-hp. gasoline engine; low center of gravity; smooth torque-converter pull at all stages of travel; no clutch maintenance; and fullest operator visibility •



### Tool Assembly For Matisa Tampers

A new tamping-tool assembly for its automatic tamping-machine has been developed by the Matisa Equipment Corporation, Chicago. This device is said to increase the speed of tamping track, give the operator finger-tip control of the tamping tools, and reduce the cost of operation. The new assembly, designated Type BB, has the same outline dimensions as its older counterpart and is thus interchangeable



# Install "SAFETY" Electro-Mechanical Air-Conditioning Equipment

*with Outstanding Design Refinements for...*

- ... greater cooling capacity
- ... less power demand
- ... reduced service costs

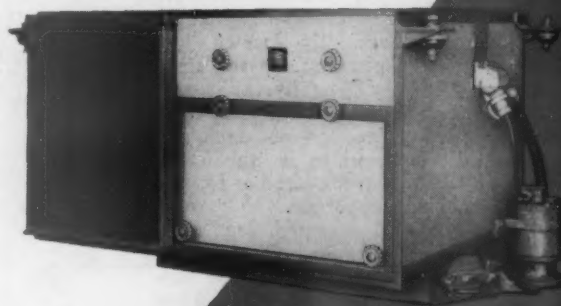
## The direct driven compressor unit...

- featuring the modern Carrier unloading compressor for automatic capacity control
- an efficient "Safety" motor designed to meet all AAR electrical specifications
- simple flexible coupling to eliminate costly belt maintenance
- provides the best cooling system available for railroad passenger cars when installed with a...

"SAFETY" EVAPORATIVE CONDENSER

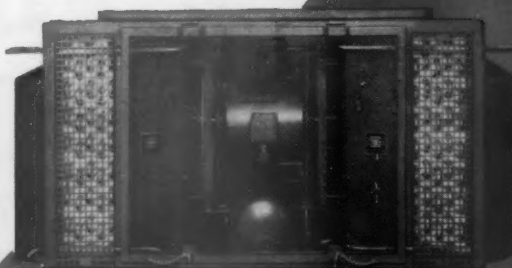
OR

"SAFETY" AIR COOLED CONDENSER



## Evaporative condenser...

- maintains capacity... filtered air and large volume spray keep coil clean
- spray is non-clogging and sump can be flushed quickly
- all parts easily accessible



## Air-cooled condenser...

- large coil surface and air volume provide rated capacity without use of water sprays
- recommended for service where maximum operating conditions do not warrant Evaporative Condenser
- available with auxiliary water spray for unusually heavy cooling requirements.

THE **SAFETY** CAR HEATING AND LIGHTING **COMPANY** INC.

NEW YORK • CHICAGO • PHILADELPHIA • ST. LOUIS • SAN FRANCISCO • NEW HAVEN • MONTREAL

● SAFETY COMPANY PRODUCTS INCLUDE: Air-conditioning Equipment • Genemotors • Generators • Fans • Regulators • Blower Units • Lighting Fixtures • Switchboards • Luggage Racks • Motor Alternators • Dynamotors • Motor Generators • Dual Voltage MG Sets ●

with the assemblies of existing machines.

On the other hand, the new unit differs from the old in three major respects:

(1) Each new eccentric shaft and its eccentric have been combined into one piece instead of being made up of one shaft with double eccentrics on each end. In connection with this improvement, the eccentric bearings have been converted to the large spherical roller-bearing type with a tapered bore and bushings. This permits adjustments to be made in the bearing clearances.

(2) The double clutch has been redesigned to provide finger-tip control of the opening and closing of the tamping tools. This is said to decrease

operator fatigue and increase the quality of the work. Alterations have also been made to the gears so the tamping tools can be opened in the time interval during which the tool assembly is raised, thereby speeding up the tamping operation.

(3) The triple-chain drive has been eliminated. This has been accomplished by driving both spindles through a worm gear on each spindle thus eliminating the triple-chain drive of one spindle, as used on present models of the Matisa tamper.

In addition to these major improvements incorporated in the new "mobile" assembly the strength of all parts having high mechanical stresses has been increased and special clutch linings have been installed •



The Kershaw "Jack-All" is designed to jack the track and to "catch-off" the ends of two ties to hold the raise.

### Kershaw "Jack-All"

A machine which will jack the track to the desired surface and simultaneously "catch off" the ends of two ties to hold the track in the proper surface for the tamping operation has been developed by the Kershaw Manufacturing Company, Montgomery, Ala. Known as the "Jack-All," the new machine is hydraulically controlled and is said to be sufficiently fast to stay ahead of all on-track tampers. It is also claimed that it can make four pulls and catch-offs per rail in approximately 3½ min.

The machine is operated by one man and has a dogging arrangement which automatically catches the rail when the jack foot engages the ballast. The insertion of the tamping feet is made hydraulically, and vibratory action is added to the tamping feet to force necessary ballast under the ties to hold the desired raise. A feature of the machine is a new eye-level telescopic

sighting unit complete with a fixed target on the "Jack-All" and a movable spotboard mounted on rollers to operate on the track ahead of the surfacing gang •



### Power Wrench

The Matisa Equipment Corporation, Chicago, is introducing in the United States, Canada, and Mexico, a power

wrench presently in use in Western Europe. Powered by a 3½-hp. gasoline engine, the portable Matisa power wrench incorporates an adjustable spring-loaded disc clutch which affords a means of varying and automatically applying a predetermined constant torque to the nuts of all bolts tightened.

The tubular steel chassis carries the power unit and wrench head mounted separately at either end. One of the two handles at the wrench-head end of the chassis is both for transporting and maneuvering the machine and the control lever of the disc clutch.

The chassis is so mounted on a light axle that vertical movement of the head and rotation about a vertical axis may take place. The tubular steel axle is supported at one end in a small two-wheeled trolley and at the other by an insulated roller, both wheels and roller being flanged to fit on the rails. It may be slung from underneath the chassis when transporting the machine by hand.

The wrench head houses, in addition to the wrench spindle, a multidisc clutch and reduction and reverse-direction gearing. Power is transmitted from the engine through a torque rod and disc clutch to a horizontal shaft in the wrench head. Two bevel pinions rotate freely on this shaft in constant mesh with a crown wheel keyed to the vertical wrench spindle. Either pinion may be engaged to transmit the drive from the horizontal shaft to the wrench spindle by means of a dog clutch sliding on the shaft between the two pinions. The direction of rotation of the wrench spindle is thus determined by the pinion transmitting the drive.

Movement of the control lever of the multidisc clutch is limited by an adjustable spring-loaded stop which, for any one setting, assures the application of equal torque to all bolts. If necessary, the stop may be removed and the clutch pressure increased by depressing the hand lever still farther to provide the greatly increased torque which is often required for removing old nuts. The clutch-control lever may be locked in position when using it as a handle for transporting the machine.

A spring-loaded universal joint is provided between the wrench spindle and the spanner-head so that, when working, the machine is always upright and balanced on its support. The whole mechanism works in an oil bath, and periodic changing of the oil is said to be the only maintenance required for the wrench head •

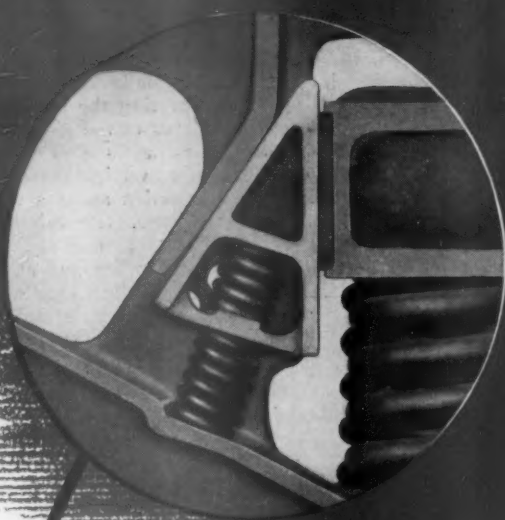
### Improved Gang Car

According to Fairmont Railway Motors, Inc., Fairmont, Minn., the outstanding features of this unit are the heavy-duty directional gear and a 2 3/16-in. drive axle. These are said to make this car particularly suited to continual heavy-duty work such as towing weed burners and many loaded push cars or trailers. It is also said



# In the Buckeye C-R<sup>®</sup> Truck

THE FRICTION WEDGES  
ARE REVERSIBLE —  
PROPER ASSEMBLY  
IS ASSURED

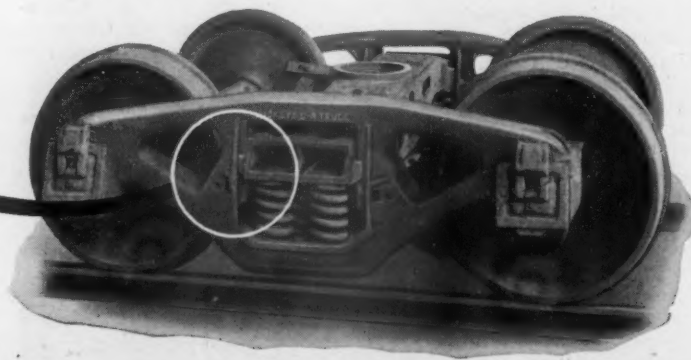


The reversible friction wedge, symmetrical about the center line of the wedge spring, eliminates the possibility of improper assembly:

- No delays in building programs or in riptrack work—
- No faulty operation—

} due to improper assembly

This feature is one of the many refinements in design available in the C-R (Cushion-Ride) Truck which contributes to its ease of assembly and maintenance and to its outstanding performance.



THE BUCKEYE STEEL CASTINGS COMPANY

New York, N. Y.

Columbus, Ohio

Chicago, Ill.

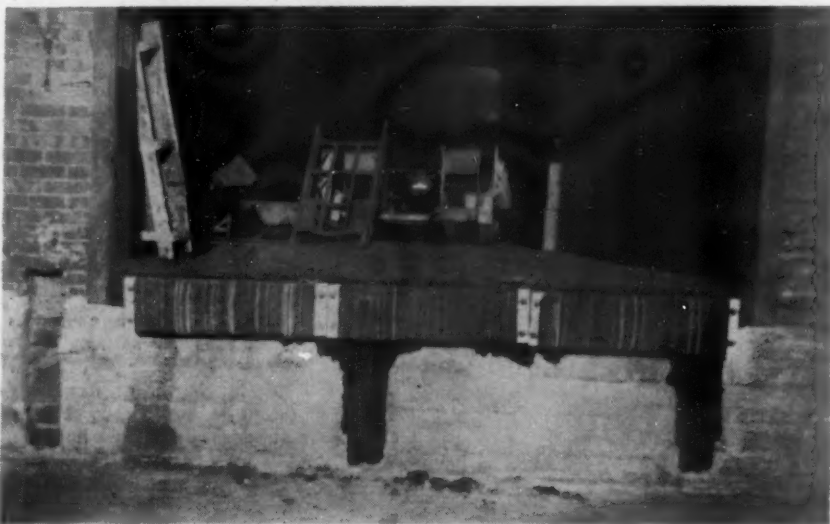


to be strong and powerful enough for the mounting of ballast-discing attachments.

Standard equipment includes vacuum service brakes, oil bath air cleaner, oil filter, electric starter, and extension lift pipes. Also available, in addition to the regular gang-car accessories, are a built-in hydraulic turntable, a chain and sprocket four-wheel drive, and trail-

er connections for the vacuum brakes.

The heavy-duty enclosed directional gear on the drive axle has straight spur gears for reversing the direction of travel, and a pinion-and-ring gear for the final drive to the axle. Power is supplied by a Ford V-8 engine and the drive includes a clutch, four-speed transmission, and a needle-bearing propeller shaft •

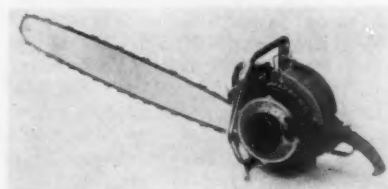


A typical warehouse loading dock equipped with a Durable Rubber Dock Bumper.

#### Rubber Dock Bumpers

The Durable Mat Company, Seattle, Wash., has recently made available Durable Rubber Dock Bumpers for use at warehouse truck loading and unloading docks.

The bumpers can be installed on wood, steel or concrete and are said to be resilient and shock absorbing. The manufacturer states that the bumpers, which are constructed of rubber pads on edge, are applicable to all types of docks. Address inquiries to Max Pollock, 1875 Forest Hills, East Cleveland 12, Ohio •



#### Chain Saw

The Homelite Corporation, Port Chester, N. Y., has introduced a new chain saw which is said to incorporate

exceptional power, faster cutting, light weight and low maintenance as outstanding features. Weighing 30 lb. and known as Model 5-30, the chain saw is powered by a 5.5-hp. gasoline engine. It is claimed that the new chain saw, because of its light and correctly balanced weight, is easy to handle and cuts in any position—up, down, or upside down—for felling, bucking, boring, notching, trimming or undercutting operations. In addition to its all-angle carburetion the new saw has an automatic clutch and positive chain lubrication •



Permasco Stop Shoe Skate is available for various sections of rail.

#### Friction Car Stops

For progressively slowing down the movement of cars on classification tracks of switching yards and on spur tracks, Permasco division of Winter, Wolff & Co., New York, has marketed a friction car stop. Designated the Permasco Stop Shoe Skate, the device is of forged steel design, yet is light enough to be easily handled. It is stated that these skates cannot be kicked off the rails.

Because the sole part of the skate absorbs the greater part of the shock, it is made of nickel-chrome steel and is given a thorough heat treatment so that the front end has greater tensile strength than the back end. They are available in three rail-section sizes: 60 to 80-lb., 85 and 90-lb., and 100-lb. Skates for larger or smaller rail sections can be had on special order •

#### Heavy-Duty Spike Puller

A heavy-duty, high-capacity hydraulic spike puller, designated Model W85 Series A, has been announced by Fairmont Railway Motors, Inc., Fairmont, Minn. Designed for rail-gang use, it can be operated by one man, and is self-propelled, both forward and reverse.

The pulling assembly, controls, and operator's platform and seat are easily positioned for pulling spikes from either side of the rail; but once positioned, the pulling is done from only one side for each setting. In operation, one machine pulls the spikes from one





side of the rail, and a second machine pulls those from the other side. Hence the machines work in pairs or multiples of two. Each machine has a capacity of 20 to 25 spikes a minute, depending on the skill and experience of the operator, and two machines can handle the needs of a gang of 75 men.

The spike puller is powered by a two-cylinder air-cooled engine. The hydraulic system for pulling the spikes includes a direct-driven pump, reservoir, microfilter, unloading valve, control valve, piston-type accumulator, and the pulling cylinder. The cylinder is

mounted on a spring counterbalanced pantograph frame for easy raising and lowering. The unit is propelled along the track by hydraulic power.

The operator raises and lowers the pulling assembly with his left hand, and controls the movement of the machine along the track with his right. A foot pedal is used to actuate the pulling cylinder control valve. The frame is fitted with a lifting post to permit handling with a rail crane. Set-off equipment, consisting of two pneumatic set-off wheels and self-storing lift pipes, is also available •



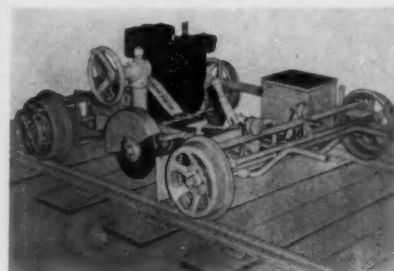
### **Ten-Ton Capacity Crawler Shovel**

The Koehring Southern Company, subsidiary of the Koehring Company of Milwaukee, Wis., is now producing a newly designed crawler-mounted excavator. Among the major improvements incorporated in the new excavator, which is rated at  $\frac{1}{2}$ -cu. yd. dipper capacity for shovel and hoe, is a simplified upper machinery arrangement that involves only two horizontal shafts. The manufacturer claims that the increase in lift capacity rating from the

former Model 205's  $7\frac{3}{4}$ -tons to 10 tons in this redesigned model can be attributed principally to changes in engineering design whereby the upper machinery was relocated behind the excavator's center of rotation.

Other improvements in the new model include fully enclosed gears, automatic brakes, a new cab design and operating lever arrangement, adjustable hook rollers and an electric dipper trip arrangement. The four individual hook and turntable rollers are mounted on non-metallic bushings and each is adjustable for wear by means of an ec-

centric. The improved dipper trip arrangement operates off an electric solenoid with button control located on one of the operating levers. Other standard Koehring features incorporated in the new Model 205 include: Self-cleaning crawlers with interchangeable shoe widths of 16 in., 20 in., and 24 in.; all-welded car body bolted to axles; single, internal expanding and reversible band clutches; a positive boom lowering device; choice of diesel, gasoline or electric power; and full convertibility from shovel to hoe, crane, dragline, clamshell or magnet attachments •



### **Rail and Frog Grinder**

A new lightweight rail and frog grinder has been announced by the Northwestern Motor Company, Eau Claire, Wis. Marketed as the 540-AB, the unit is said to maintain an accurate relationship between the grinding wheel and rail. The grinder is powered by an 8.25-hp., air-cooled, 4-cycle engine, and can be handled by one man. The grinding wheel adjustment is accomplished by a positive locking screw arrangement and the rolling carriage is secured on the main frame by eight concave rollers which grip the rolling tubes top and bottom to reduce vibration. Optional equipment are the flexible shaft and grinding attachments for such operations as slotting rails between joints, removing overflow metal caused by battering of heavy traffic on the joints; and removing excess metal when joints are built up by welding. The standard 9-ft. flexible Haskins shaft will accommodate any of the manufacturer's standard grinding attachments. This shaft is powered by "V"-belts from the engine pulley. Rail skids and extension lift handles are provided to make the 540-AB easier to handle when moving it on or off the track •

### **Hydraulic Tie Puller and Inserter**

The Kershaw Manufacturing Company, Montgomery, Ala., has placed in the market a hydraulic tie puller and inserter which, the company states, was primarily developed for retimbering gangs to eliminate expensive hand methods in removing old ties and in-

# PURE IMAGINEERING

from **Standard's** railroad laboratory!



A probing mind constantly seeking the new — and an open mind ceaselessly improving the old. That's the combination which raises *Standard's* production team above the level of a fabricating plant — it is a railroad laboratory.

The latest improvement in the *Standard Coupling Device* is a perfect demonstration of the open mind constantly seeking to improve. A slight addition in length, a slight turn of the end, and this device was made safer as well as more efficient!

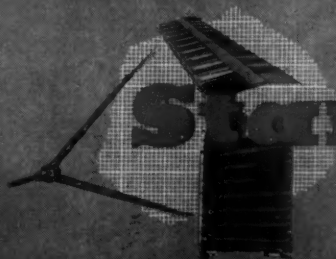
The *Standard Positioning Device with Coupler Height Adjustment* is a good example of the probing mind. It is a development with no predecessors. Pure anticipation of a need — imagineering — conceived this device for greater railroad safety.

These are the things which keep the story of *Standard* alive — continually moving ahead — constantly increasing its investment in the future of railroading.



STANDARD COUPLER  
POSITIONING DEVICE  
WITH HEIGHT  
ADJUSTMENT

STANDARD COUPLING DEVICE



**RAILWAY EQUIPMENT MANUFACTURING COMPANY**

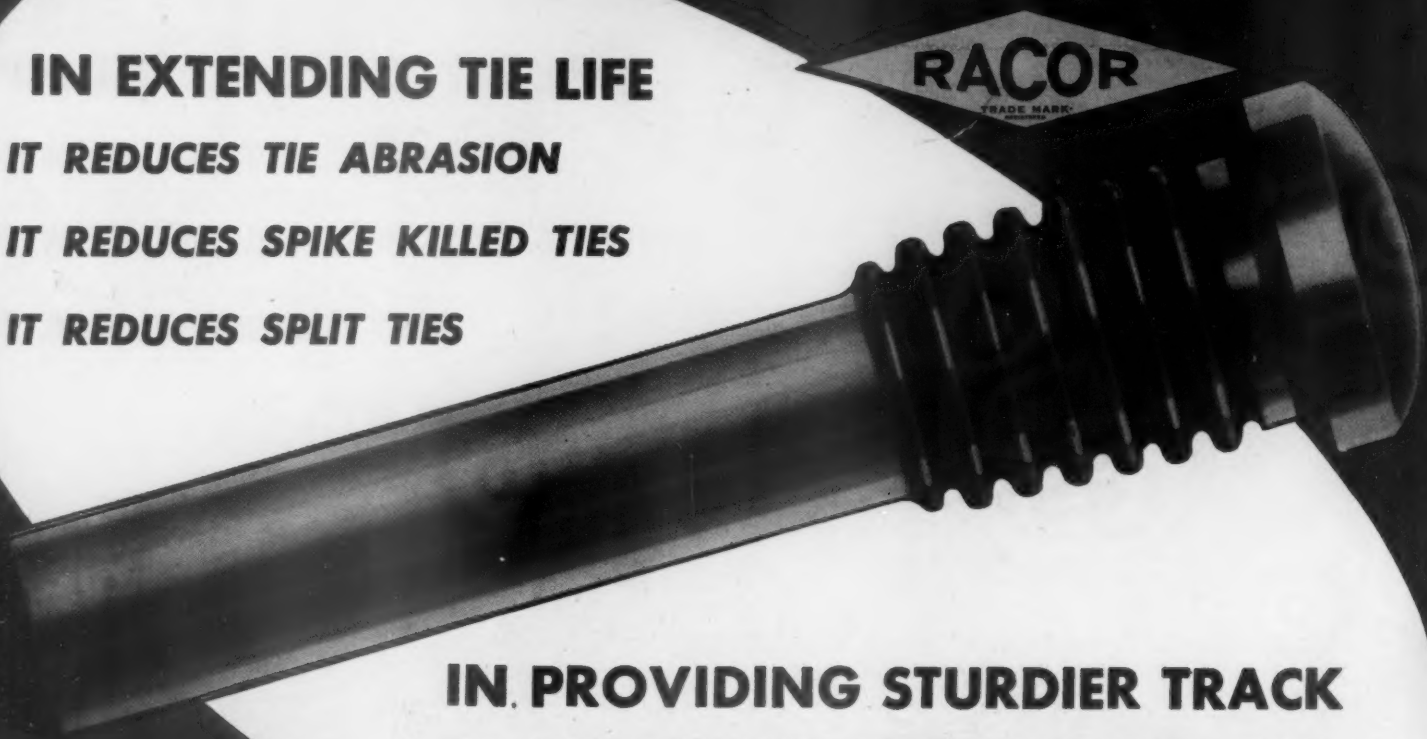
310 S. MICHIGAN AVENUE • CHICAGO • 247 PARK AVENUE • NEW YORK



# THE RACOR STUD

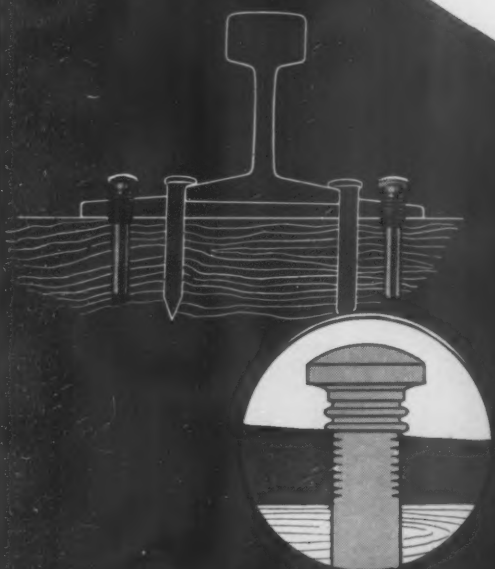
## IN EXTENDING TIE LIFE

- IT REDUCES TIE ABRASION
- IT REDUCES SPIKE KILLED TIES
- IT REDUCES SPLIT TIES



## IN PROVIDING STURDIER TRACK

- IT MAINTAINS BETTER LINE AND GAGE
- IT DEFERS TIE REPLACEMENT
- IT REDUCES LABOR COSTS



AMERICAN

**Brake Shoe**

COMPANY

**RAMAPO AJAX DIVISION**

AMERICAN BRAKE SHOE COMPANY, 109 N. Wabash Ave., Chicago 2, Ill.

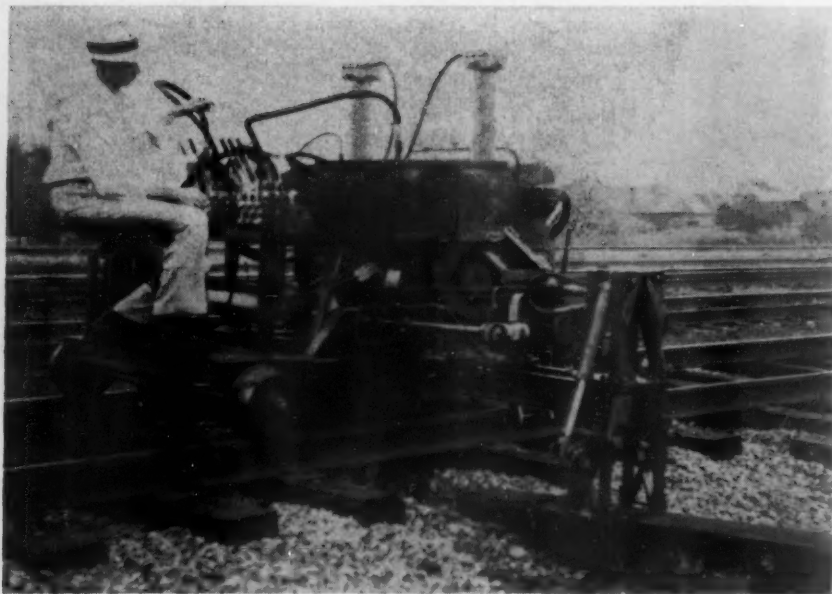
**CANADIAN RAMAPO DIVISION**

DOMINION BRAKE SHOE COMPANY, Niagara Falls, Ontario, Can.

DOMINION

**Brake Shoe**

COMPANY, LTD.



The tie tongs of the new Kershaw machine are hydraulically controlled.

serting new ones. The new self-propelled machine is equipped with hydraulically controlled tie tongs for holding the tie during the pulling and inserting operation. The unit also has a power jack mechanism primarily for out-of-face work, as generally the track is surfaced after timbering is done.

It is said that the machine will remove a tie from the track and place it on the subgrade in approximately 30

sec. and that it will insert a new tie in the same crib in another 30 sec. Hence, the complete operation of removing an old tie and inserting a new one is said to take approximately 1 min. with no damage to the old tie during removal or to the new one during insertion. It is contended that the machine will reduce the man-hours required for tie pulling and inserting and increase production in the timbering gang •



### Hy-Rail Motor Car

Fairmont Railway Motors, Inc., Fairmont, Minn., has announced the A32 Series A model of its Hy-Rail motor car. The new unit is designed expressly for railroad maintenance service. The motor car includes a chassis and a pick-up body applied behind an enclosed cab. It has four-cylinder engine, three-speed transmission, with underdrive in transfer case, four-wheel drive, hydraulic brakes, 7:00 by 15:00 pneumatic tires, and 1,500-lb. load capacity. Body styles other than the

pick-up type are under consideration.

The on-track mechanism is similar to that furnished on other Fairmont Hy-Rail motor cars in that non-load-bearing guide wheels are used. Normally, all of the vertical load is carried on the pneumatic tires and the guide wheels serve only to position the unit on the track. However, they are strong enough to carry the full vehicle load in an emergency.

The mounting and linkage of the guide wheels are such that, when the wheels are in the lowered or on-track position, any condition that might tend

to raise them must lift that portion of the total vehicle weight carried by the adjacent pneumatic tires. The guide wheels are raised and lowered manually, and have a pin lock to hold them in the lowered position and a spring-loaded, rubber-cushioned catch to secure them when raised •



### Crawler Crane

Shield Bantam Company, Waverly, Iowa, which formerly was engaged only in the manufacture of truck-mounted rigs, has now expanded its line to include a completely new 3/8-yd., 5-ton crawler crane-shovel. This Model C-35 Bantam machine is available with interchangeable front-end attachments to enable it to serve as a crane, dragline, back hoe, shovel, clamshell, magnet, wood grapple or pile driver.

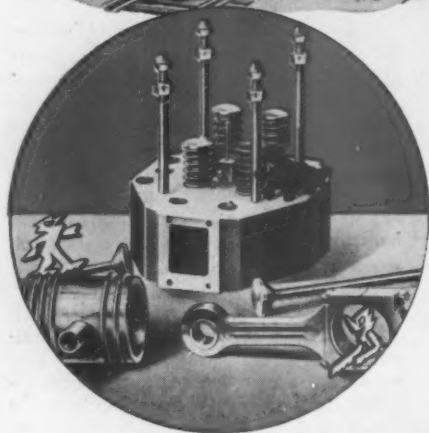
Among its engineering features are: A two-speed independent travel which enables the operator to work a front-end attachment while traveling and swinging the machine; an undercarriage designed with heavy duty main frame and deep, rigid side rails; six track rollers which provide even distribution of load weight over entire track assembly; drive power through chain and jaw clutches for each track; a "twin-swinging" drive arrangement, plus fast-acting mechanical controls and jaw clutches, which are said to enable the operator to enter turns with split-second pause and return to straight-line travel without stopping; and low ground-bearing pressures with either of the two standard size pads available—5 p.s.i. with 16-in. pads and 3 1/3 p.s.i. with 24-in. pads.

Other features include: A power boom hoist which gives positive lowering as well as raising; full-revolving crane with 6 r.p.m. swing speed and 175 ft. per min. line speed; antifric-tion bearings; machine-cut gears; internal expanding band-type "snap-in" clutches; external contracting brakes; large-size trunnion base with four trunnion rollers; and four adjustable cam-type hook rollers •



# WEARMITES AHEAD...

## PROCEED WITH CAUTION!



On the main line or in the yards, your Diesel engines are constantly faced with the ever-present menace of WEARMITES ... Grit, Dust, Dirt and Tarry Sludge. Lubricating oil and Fuel oil must be freed of these engine-destroying contaminants if costly repairs and down time are to be avoided.

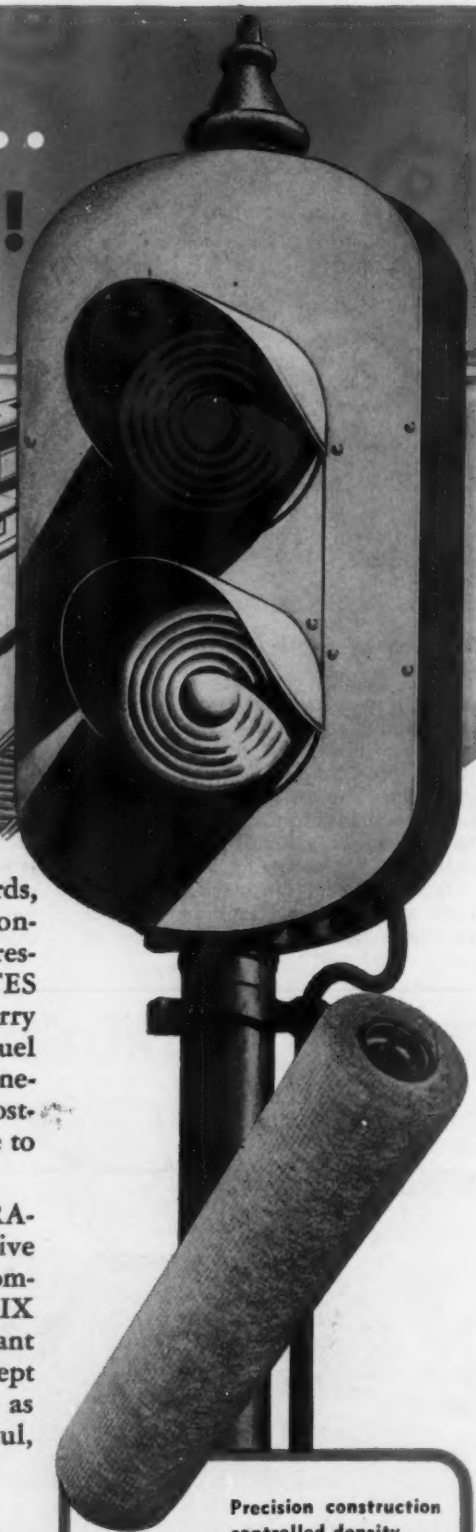
**WIX ENGINEERED FILTRATION** is the practical, effective and economical means for combating WEARMITES in your Diesel equipment. With WIX Cartridges in your Diesel Filters, you are assured a constant flow of continuously cleaned oil ... cleaned better ... kept clean longer. And you may select the filtrant indicated as best for the type of service condition such as: long haul, through run, stop-and-go branch line or yard work.

Write for particulars on how your road can save lubrication dollars with **WIX ENGINEERED FILTRATION**.

**LUBE** *wix* **FUEL**  
TRADE MARK REG.  
**RAILROAD OIL FILTERS**

**WIX CORPORATION • GASTONIA, N. C.**

WAREHOUSE STOCKS IN: GASTONIA • ATLANTA • CHICAGO • NEW YORK • ST. PAUL • ST. LOUIS • SACRAMENTO



Precision construction ... controlled density ... uniform quality ... self-contained sealing gaskets ... a filtrant best suited to the service and many other WIX plus features add up to WIX Engineered Filtration. Whether for Lubricating or Fuel Oil, crush-proof, non-collapsible WIX Filter Cartridges show a decided dollars and cents advantage for you.



*O'Toole's got a very smart rule  
Railway Age is his workaday  
tool  
It's promotion he's breedin'  
This devotion to readin'  
It's better than school for  
O'Toole*

You can't fool O'Toole! Not on railway matters, anyway.

And he gets more than just on-the-job information . . . he follows *all* the important railway news as it's gathered, sifted and interpreted by *Railway Age's* 27-man editorial team.

In his community, in his neighborhood, he qualifies as a spokesman for his industry.

In his department, on his railroad, he's a man whose future is secure . . . he knows what other railroad men on other railroads are doing to improve service, cut costs, increase efficiency. And he translates this information into applications that fit his own job needs—his own railroad's progress.

But O'Toole doesn't permit his office reading to compete with his daily work. *He gets Railway Age at home*—for a more personal, more leisurely, more thorough reading.

Follow his suggestion: Get *Railway Age* coming to *your* home, too.

Railway Age 30 Church Street, New York 7, N. Y.		9-7-53 Att'n: R. C. Van Nos.
Please send Railway Age to me every week:		
<input type="checkbox"/> for one year \$4	<input type="checkbox"/> Payment enclosed	
<input type="checkbox"/> for two years \$6	<input type="checkbox"/> Bill me after service begins	
Name .....		
Home Address .....		
City .....	Zone .....	State .....
Railroad .....		
Dept. ....	Title .....	
Above rates apply TO RAILROAD MEN ONLY (in the U. S., Canada and Mexico)		

If you haven't tried your hand at a *Railway Age* limerick yet, why not start now? \$5 goes to those sending us ones we use.

## Benchmarks and Yardsticks

**EVERYBODY IN A BIG COMPANY**—whether he is supervisor or is supervised—has to get explanations, all the time, to keep him convinced that the work he is doing is to his advantage; and that it is also to his advantage to do it well. The wages he gets are a pretty persuasive part of such an explanation, but are not usually sufficient by themselves—because, if getting the wages were the only motive, then nobody would ever do any more work than barely enough to stay on the payroll.

**Everybody** in a big organization does some specialized job that has no meaning or usefulness by itself. There is no meaning or value to the work of a track gang, unless there are trains to run on the tracks, and unless the trains carry enough traffic to pay all necessary expenses, and leave something over. It is management's job to put all these specialized occupations together—and induce all participants to cooperate to provide a service the public will buy, at a remunerative price.

**Management's job** is to induce all grades of employees and supervisors, suppliers, investors and customers to act in unison around the railroad business so each one is better off by working together than if he should forsake the organization.

**It takes a constant stream** of persuasive and explanatory words and inducements, going down from management through the ranks and out to investors and customers, to keep all of these thousands of people working with each other instead of against each other. The same system of communication which takes explanations from management down the ranks should, also, work the other way—to get the ideas (whether right or wrong) from the organization up to top management. Every supervisor and officer is a part of this system of communication—and if he doesn't pass along, both ways, upward and downward, what he hears that's important, then the system of communication falls down. Then the effectiveness of management in keeping the operation efficient begins to limp.

**Not all of this system** of communication consists of formal orders "coming down" and formal complaints "going up." There is also an informal system of communication, duplicating the formal one. Sometimes this system is known as the "grapevine." It is pretty important that the grapevine in a company should convey accurate and constructive information, not false and negative messages.

**Under a dictatorship**, people are induced to work together—not because of the rewards they get for cooperating, but from fear of the punishment which awaits them if they don't. It's much easier for the boss when he is given a whip to crack than it is to require him to get results by explanation and persuasion—but that's the difference between the slave world and the free world.

J.G.L.

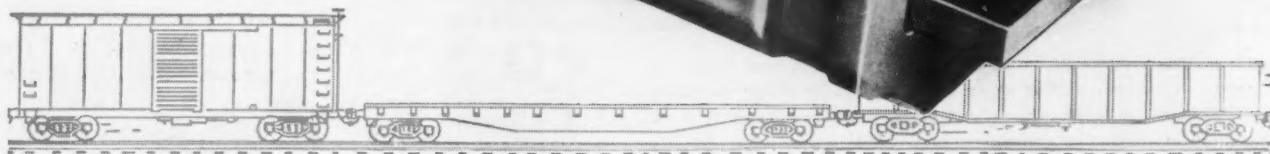


# protection

*for cars and lading*



Specify  
**WESTINGHOUSE**  
**FRICTION DRAFT GEARS**  
Certified A. A. R

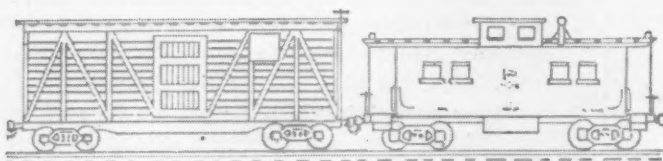


**ABSORPTION**

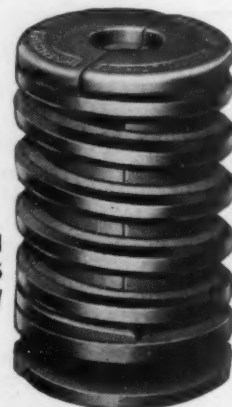
**ENDURANCE**

**STURDINESS**

**CAPACITY**



**CARDWELL FRICTION**  
**BOLSTER SPRINGS**  
*Short or Long Travel*



**Cardwell Westinghouse Co., Chicago**  
**Canadian Cardwell Co., Ltd., Montreal**

## Is There a Shortage In Management Skill?

The late Walter P. Chrysler, who began his career as a railroader, was asked, after he had attained fame as an automobile manufacturer, what principal innovation he would make if, once again, he went back to railroading. His answer (as reported by the man who asked the question) was: "I'd hire all the engineers I could get."

It may have been 25 years ago when he made that statement—but what's so wrong about it even today?

The declaration may be worded a little narrowly. It isn't of course, just plenty of engineers that an industry needs today, to come out on top in the widespread interindustry competition. In addition to lots of engineers of many varieties, skilled technicians of all kinds are needed—accountants, statisticians, psychologists, experts in publicity and public relations, economic and marketing analysts, technicians in scientific pricing. Practically all the large and successful industrial companies employ large numbers of such highly trained specialists—and apparently find it profitable to do so.

### *Harmonizing the Specialists*

A need which most industries find equally pressing is for men who are schooled right out of their specialization and into proficiency in top management duties—that is, the job which consists in bringing the specialists' operations into the kind of harmony and subordination which produces a salable product and attractive net income. Hardly any specialist, without such supervision over him, would ever operate in a manner to produce net income.

In this direction, we've heard of one big industrial company which is ready and anxious to give a large number of its technicians—who are already graduate engineers—a couple of years' intensive post-graduate schooling in top-management operations, at cost to the company of, probably, \$25,000 per man. In some places, apparently, a dearth of adequate executive talent is being keenly felt; and the industries which are aware of it are trying to steal a march on their competitors by "getting there fustest with the mostest" in skilled executive personnel.

A generation or two ago it was generally believed that effective managers were born, not made. It is, no doubt, true that some of the most successful industrial leaders got where they did by their innate qualities and without purposive schooling or other training for their duties. With the country industrialized to the degree it now is, though, it's quite evident that innate genius alone will not fill all the jobs where genius is required. Some of those jobs will have to be filled by "next-bests"; and the next-best thing to a spontaneous genius is one who has had all the known attributes of genius drilled into him by schooling and practice.

One Thomas A. Edison, quite likely, is worth 100 research physicists—but if you have no Edisons when you need a dozen, then maybe training a thousand or so physicists as thoroughly as you can is the only available alternative, if you want progress to continue. After all, it wasn't just one genius that solved the problem of nuclear fission—but scores and hundreds (maybe thousands) of highly schooled scientists. Some of the "miracle drugs," produced synthetically, seem to be better and to come along a lot less expensively than the product in "natural genius" form.

### *Are Railroads Setting the Pace?*

The railroad industry is certainly awake, as probably never before, to the necessity of recruiting trained men for technical and supervisory positions—and to the equal necessity of providing more schooling along these lines for men already employed in railroad work. The question is—is the railroad effort in this direction as intensive as the urgency of the need calls for? Is it in keeping with the kind of competition other industries are offering for the limited supply of such skill?

Every railroad man can answer that question for himself if he will ask some searching questions of his friends in other industries—in companies comparable in magnitude to his own—and then contrast what he finds, quantitatively, with what his own company is doing in recruiting and training.

Such information would most likely supply the answer to the question—whether the railroad industry is going to advance or decline relative to other industry during the next quarter century. Luck rather than managerial skill and foresight undoubtedly plays a main part in the success of many industries in their early development. But techniques hit upon by luck are soon copied and lose their advantage. Over the long term, genius in foresighted leadership—whether intuitive or contrived—seems to be the principal determinant of industry progress.



## Monon Again Registers Community Consciousness

A couple of weeks ago the Monon opened a new station at Lowell, Ind., (population 1,600) to replace one destroyed by a freight train derailment. The opening wasn't just a routine event for the railroad, but was made into a community celebration of considerable magnitude.

The opening day found the new building decked in bunting (in the road's colors, of course). Meteorological balloons soared aloft carrying Monon banners. Flowers festooned the ticket office, while an American Legion public address system played the now-famous Monon songs. Young and old, shy and bold inspected every part of the building. Children carried off souvenir engineer caps, large chocolate bars (specially wrapped and labeled for the occasion), train postal cards and soft drinks. At noon, all of the stores—true to the placarded announcement in their windows—closed shop for the official dedication.

The actual ceremonies were sensibly short. President Warren Brown and the local agent shared the spotlight with civic leaders who were simultaneously celebrating the inauguration of the

town's new street lighting system. Lunch for everybody "on the house" followed—served in the nearby Legion hall by members of the Ladies Garden Club, suitably costumed for the occasion.

It appeared that at least one third of the town turned out for the festivities. And it wasn't just the older generation either. There were plenty of children and teenagers—the so-called lost or rubber-tired generation that is supposed to know little and care less about railroads. They asked lots of questions and exhibited interest in what they saw.

A station is as much a community structure as it is a piece of railroad property, and community interest in it is not hard to arouse, if the railroad concerned is accepted by the community as one of its own.

It is right at the community level where good railroad relations with the public begin. They should not end there, of course—because there's little use in making friends if their good will isn't translated into a political framework which will permit the railroads to serve their friends better and more often. The way to get the indispensable start toward comprehensively favorable public relations is to begin by doing the best you can with what you've got—and the Monon has established quite a tradition for itself in this fertile area.

---

## What Is Sinful About "Selective Rate Cutting"?

There is one accusation of the long-haul truckers that, if it isn't true, ought to be. That is the assertion that the railroads are engaged in an effort, by "selective rate-cutting," to redirect back to the railroads a lot of traffic that the trucks have taken from the railroads.

"Selective rate cutting" was the device that the truckers used to get this traffic away from the railroads.

The fact is of course that it is the only rate device the truck operators have ever used. That is to say, the truckers have never said to the shipping community as a whole: "We are going to give you cheaper transportation on everything the railroads are hauling for you." On the contrary, the truckers have very carefully stayed away from the traffic that the railroads haul for 1 or 2 cents per ton-mile, and have concentrated their attention on the railroad traffic bearing rates of 4 cents a ton-mile or more.

Railroad rates were originally constituted on a basis of monopoly pricing—whereby "value of service" was given great weight. Silk and ma-

chinery could "bear" a higher rate than coal and wheat without the freight rate's becoming a burden to the shipper or consignee—so rates far higher than the cost of the movement were levied on high-value commodities—and, as long as overall railway earnings were not extortionate, it was evident that the nation as a whole was better off with this kind of rate-making than it would have been with rates based solely upon costs. However, as the British economist Gilbert Walker pointed out, in his brilliant article mentioned in this space two weeks ago:

"Classification by value made a present to the competing road hauliers of any and all high-classed traffic that they might care to bid for. The railways were left with the low-valued, low-classed merchandise on which railway rate was lower than road cost. . . . Railway rates are high relative to costs when costs are low, and low relative to costs when costs are high. . . . The principle of arriving at the rate by averaging the costs might have served the interests of the public in a market in which. . . traffic was monopolized. . . . But it will not and it cannot work in a transport market in which the transporter, on whom is imposed the obligation of charging a rate computed from the average of all costs, is in any way exposed to competition from other transporters not so bound."



**CHANNEL CHANGE**, one of six made in Elkhorn creek, permitted the tracks to be laid over the old creek bed so as to replace a sharp curve with one of 3 deg.

## N&W LINE AND GRADE CHANGE...

# Smooths Route in Mountains

Relocation project makes it possible for the road to realize full benefit from earlier \$13-million Elkhorn Tunnel project, and permits increased train tonnage and safer operation

One of the latest major improvements undertaken by the Norfolk & Western in the past seven years for eliminating disadvantageous conditions and for improving railroad service is a five-mile relocation program on its double-track main line between Lick Branch, W. Va., and North Fork, which has now been completed at a cost of approximately \$3.5 million.

This project reduced the curvature as well as the grade on this portion of the Pocahontas division, and also permitted the road to obtain full benefit from an earlier adjoining project over Elkhorn mountain, including increased train tonnage and safer operation. The previous project, a 2.5-year undertaking costing about \$13 million, included the rebuilding of the line between Cooper and Lick Branch and the replacement of a single-track tunnel with a modern large-bore double-track tunnel\* on a much better grade.

Started in June 1951, the latest project provides a ruling grade of 1.4 per cent, compensated for curves, for eastbound traffic up the mountain, as compared with the former ruling grade of 1.5 per cent, which was not compensated and had the effect on many curves of a 2 per cent grade. In addition to improving the grade, the project also included betterments to the line; although

the relocated line never deviates more than 300 ft. from the old alignment, eight bridges and 11 curves were eliminated. Of the remaining 12 curves, 11 are 4 deg. 30 min. or less, while the other is a 6-deg. curve. Formerly, the maximum curvature was 12 deg. 49 min. and 15 of the curves were 8 deg. or more.

### Eliminates Several Bridges

In general, the original and relocated lines follow the course of Elkhorn creek. This waterway, which formerly twisted back and forth under the railroad, crossed the old line at eight locations under seven bridges and one masonry arch. Trace branch, a tributary of Elkhorn creek, also crossed the railroad under a bridge. By making channel changes at three locations of Elkhorn creek, six bridges were eliminated and two were replaced by reinforced-concrete box culverts, one of which provides a triple opening for Elkhorn creek. About 22,000 sq. ft. of precast concrete cribbing were used for retaining walls required principally for holding slopes along the channel changes.

Almost one million cubic yards of excavation were required for this project, most of which included sandstone rock and shale. It was contracted for on an "unclassified" basis but required much blasting and power shovel work. The roadbed was made about 47 ft.

\*See "Large N&W Bore Gives Lift to Operations," in November 18, 1950, issue of *Railway Age*.





**DISPOSAL AREAS** for excess excavated material were hard to find; in some instances, as here at Powhatan, old slate dumps of coal mines were used for piling up the waste.



**ELKHORN CUT**, where the rock was 110 ft. high over the tracks, was one of the deepest encountered. Note bench on the slope to catch falling material and rocks.



**REVERSE CURVE** was eliminated here by cutting through a hill. The old line extended around the small hill at the right.



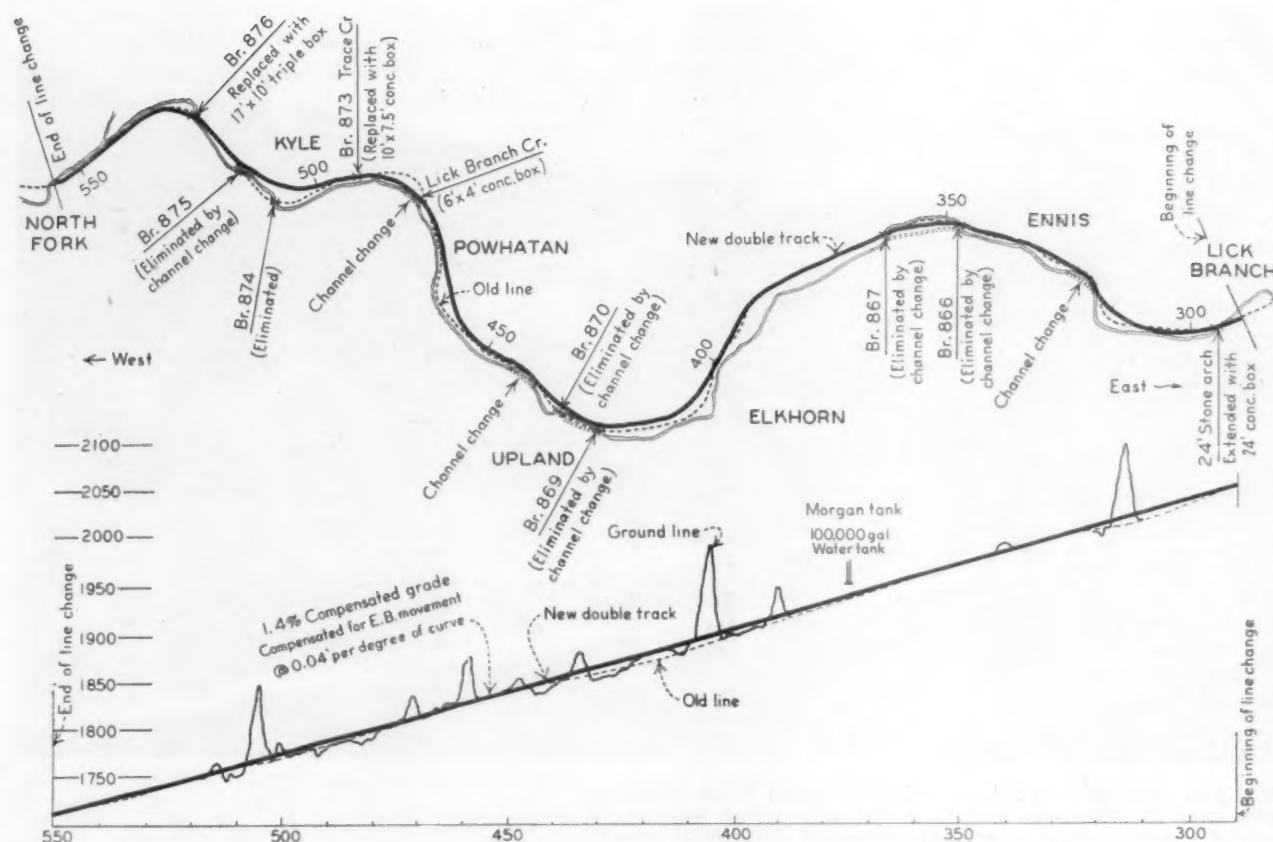
**TIGHT QUARTERS** in which the line improvements were made are emphasized by this view. Old line location was just to the right of the pole line in the foreground.



**TRIPLE CONCRETE BOX** provides one of the two crossings of Elkhorn creek on the entire project, six other crossings having been eliminated by channel changes.



**SLIDE-DETECTOR FENCES** were installed in all cuts to protect trains from falling rocks and material. The old roadbed, somewhat lower, was in left foreground.



**PLAN AND PROFILE** of the double-track line and grade revision project which, through curve and grade reduction, permits increased train tonnage and safer operation.

wide to provide a distance of 16 ft. from the centerline of each main track to the edge of the roadbed, with the tracks spaced 14.5 ft. apart. The average cut slopes were made  $\frac{3}{4}$  to 1, although some were sloped  $\frac{1}{2}$  to 1, and the average slopes for fills were made  $1\frac{1}{2}$  to 1. The deepest cut was about 110 ft. over the track centerline. At some cut locations old coal-mine workings were encountered, making it necessary to excavate benches, about 40 ft. wide, on the slope for protecting the tracks from this unstable ground.

The railroad carried out the project with as little inconvenience to others as possible. For example, at Upland a small church and nine houses were located on the proposed new route. Except for one house, which had to be rebuilt, these buildings were relocated.

One of the more important grading problems was finding places to waste the excavated material without excessive hauls. For the most part, disposal areas were found in the hollows on lands of cooperating coal companies. In one instance, three houses had to be raised when providing a disposal area and three other buildings were moved.

Other work incidental to the project was caused by the proximity of U.S. Highway 52, which parallels the railroad. At Powhatan, a portion of the highway had to be moved; Elkhorn creek was rechannelled to run through the location of the old highway, and tracks laid over the filled-in creek bed.

Still another problem was the presence of a 12-in. pipeline buried at one side of the original subgrade.

This locomotive and shop supply line carries water from a pumping plant located at Bluestone, high in the mountains, to Kimball, 16 miles down the railroad grade. The line change required the rebuilding of 25,350 ft. of the pipeline. Also, a 100,000-gal. water tank was moved about one mile downgrade by dismantling and re-erecting it.

The tracks were rebuilt on the new alignment, using all creosote-treated ties placed temporarily on cinder ballast applied 12 in. under the ties. In about a year it is planned to raise the tracks on crushed limestone ballast. About 1.9 miles of 140-lb. and 3.1 miles of 132-lb. rail were laid on the eastbound (uphill) track and 132-lb. rail on the westbound. The rail is supported on double-shoulder tie plates, with 8-in. by 13 $\frac{1}{2}$ -in. plates used on tangents and 8-in. by 18-in. plates on curves 2 deg. and over.

A great deal of work was required of signal forces in changing from the old to the new tracks, including installation of C.T.C. with each track signaled for traffic in both directions throughout this area. All high cuts were protected by slide-detector fences. These totaled 8,542 lin. ft. in length and in some cuts were installed six tiers high.

The grading and concrete crib and culvert work was done under contract by the Ralph E. Mills Construction Company. Track and signal work was carried out by railroad forces. All work was performed under general direction of A. B. Stone, chief engineer, and under direct supervision of B. E. Crumpler, assistant engineer on the Pocahontas division.





Railroads were an essential part of the National Scout Jamboree, with over 27,000 scouts and their leaders traveling west on 75 special trains. Chicago area scouts decorated this CB&Q special.

## ONLY THE RAILROADS HAD ENOUGH CAPACITY FOR . . . **Milk, Water & Boys**

Several records were set by National Scout Jamboree in California — Transportation arrangements, and keeping the boys supplied with food and fluids, were major problems in a long-haul operation

The largest boys' encampment in the world is the description most often given the third National Jamboree of the Boy Scouts of America held near Los Angeles last July. Because most scouts traveled long and far to reach the Jamboree, large-scale train trips were organized and planned as part of the proceedings. In their major role of providing transportation, the railroads put forth special efforts to assist the youth of the country in getting to the Jamboree, and in getting the most educational value and entertainment from their trip.

### WHAT A JAMBOREE IS

A National Jamboree is a once-in-a-lifetime experience for those Boy Scouts and their leaders fortunate enough to attend. It can best be described as something like an enormous boys' summer camp which is in session for only one week.

The National Boy Scout Council—which organizes and plans the Jamboree—sees it as a method of further promoting the democratic way of life. In the words of

the council: "The simple but significant activities of living together in the vast encampment, cooking, putting on demonstrations, hiking, and taking part in huge arena shows and sectional activities all demonstrate democracy in action." National leaders in all fields consider it one of the great assets of a democratic society.

This Jamboree was the third—and the largest—held in this country. The first was at Washington, D.C., in 1937, the second at Valley Forge, Pa., in 1950. The location is important because the scout organization considers the opportunities for travel an essential part of the Jamboree program.

Every regional scout council in every state is invited to send representatives to the Jamboree. Delegates are restricted to boys 12 and older who have had actual camping experience. Each group of boys must bring its own pup tents for sleeping (2 boys to a tent) and its own cooking utensils. The Jamboree is operated as a self-liquidating enterprise, with each participant paying a fee which provides food, use of equipment and all camp costs.

The Third Jamboree "tent city" was set up on a 3,000-acre plot loaned by the Irvine Ranch at Newport Beach, Cal.—one of the few remaining land-holdings in Southern California that dates from the old land-grant system of the Spanish-Mexican days. The area was divided into 36 "villages," each with its own health lodge, headquarters tent, commissary and equipment tents, post office and shower. Water was supplied by 12 miles of water mains laid on top of the ground.

### **The Swap Tent**

An outstanding feature of the Jamboree was the swap tent—really a large bargaining arena where enterprising scouts could, and did, swap anything for anything. Several of these were strategically located in the encampment. The basic swapping material was the identification swatch designed by each regional council. From there the swapping ranged into live or dead toads, snakes, pen knives, ornamental stones—and just about anything that ever interested a boy.

Conspicuously present were a number of railroad "souvenirs" garnered (by hard bargaining) from railroad employees across the nation. Not many railroad employees who ran up against these bargainers will soon forget their experience. Newspaper men and prominent citizens who visted these swapping arenas considered themselves lucky if they came out with most of their belongings still in hand. They agreed with a Santa Fe

passenger escort who observed that believers in free enterprise need have no worry so long as so many capable entrepreneurs were on their way into the business world.

### **THE TRANSPORTATION PROBLEM**

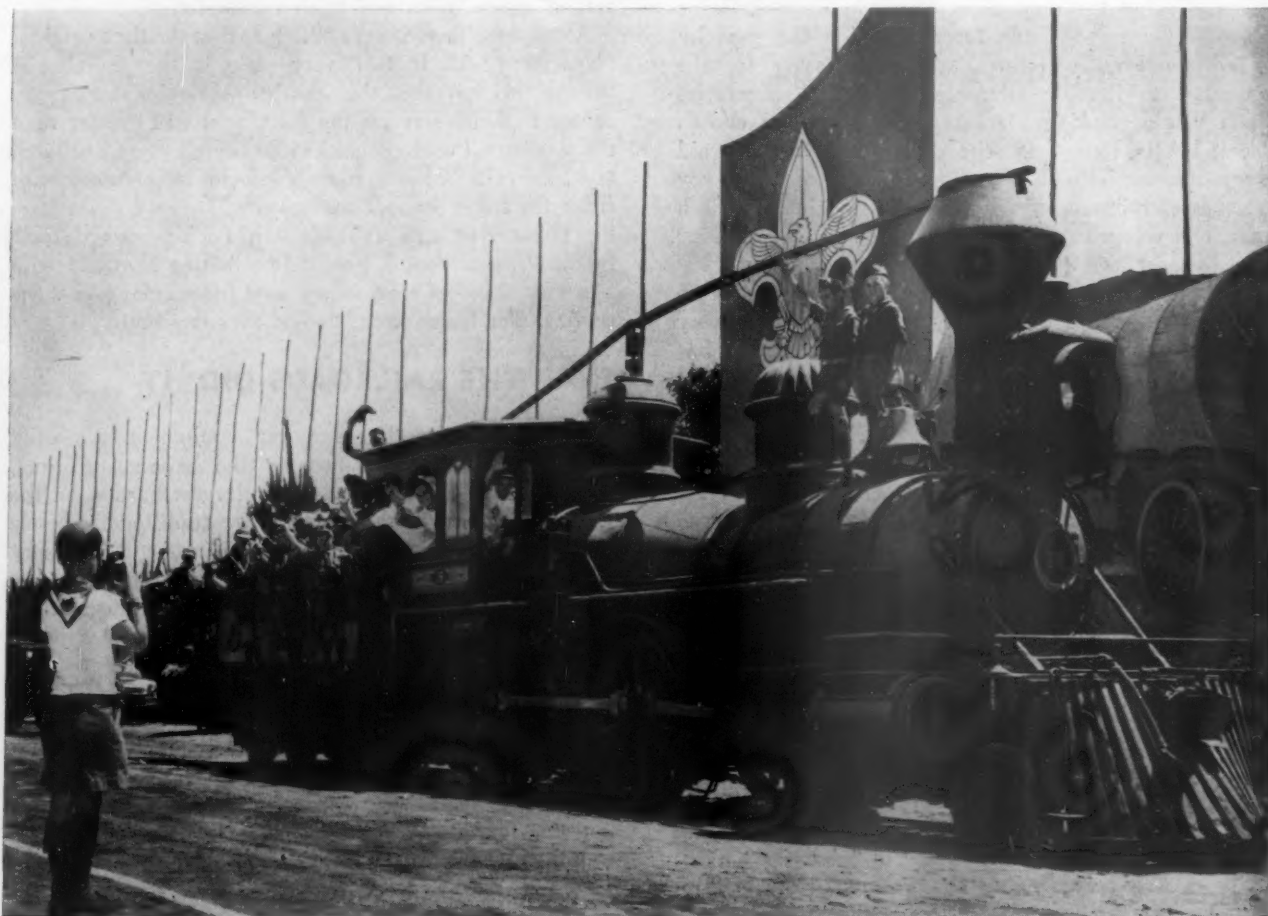
About 50,000 scouts and their leaders attended this year's Jamboree. Upwards of 35,000 journeyed from localities 1,000 or more miles from the encampment. Of these, 27,000 came in 75 special trains which traveled via devious routes so their passengers could tour the West, visiting national parks and localities of scenic or other interest.

This 75-train movement is considered one of the greatest single organized non-military movements ever handled in this country. Though there have been bigger non-military movements by train in the past, it is believed that never have so many been moved so far.

With the encampment being held on the Pacific Coast, and the largest number of scouts living in the populous areas of the East, the task of transporting large numbers of scouts clear across the country was immense. It fell pretty much to the railroads because neither the air nor bus lines were able to handle such volume.

### **Advance Planning**

Planning for the movement began just about a year in advance. Each scout council sponsoring a train was



One of the many entertainments staged at the Jamboree was a "Golden Spike Pageant," for which the UP loaned this old locomotive.





The Western Pacific doubled-up trains and used GN power to help it blend several scout extras with a big rush of perishables. This 21-car WP scout special was passing Niles, Cal.



An all-time record of 113 sleepers jammed the Santa Fe's tracks at Grand Canyon on July 28.

asked to select several alternate itineraries for its train. These were then studied by a committee established by the railroads to coordinate planning with the National Boy Scout organization. It was found that better than half of the councils wanted their trains to go to the same places at about the same time. This was impossible for a number of reasons, the foremost being the capacity of individual railroad lines. It was necessary for the committee to develop alternate routes and itineraries which would send each train generally to the chosen places, but to route and schedule them so as to avoid congestion at individual national parks and on key stretches of railroad. Once given a basic itinerary, each council developed special side trips and sightseeing stops to meet its own interests and requirements.

The net result was that hardly two out of the 75 special train groups did exactly the same thing—every one was different—though most of them visited a few favorite spots, such as Glacier, Yellowstone and Grand Canyon National Parks.

#### **In Tourist Season**

The Jamboree movement fell during the normal peak season for railroad vacation travel throughout most of the nation. In addition to handling the Boy Scouts, the railroads were called upon to operate the usual extra trains and cars to northern and western vacation and resort areas. Moreover, various national guard units held their regular summer training camps which required numerous military "extras." And the special train requirements of the regular military services continued unabated. Further, there were two other large conventions—one in San Francisco and the other in New York—being held the same week, each requiring special train movements. As a result, the supply of passenger cars of all types was pretty tight. The Pullman Company reported that every car in its active fleet of 5,500 was in service during the month of July.

The impact of the scout movement was greatest in the

western territories—where distances are great, and facilities for handling large-volume passenger movements are somewhat limited. Not only did the Jamboree occur during the normal peak tourist season, it coincided, on certain lines, with seasonal peak movements of lumber, and of green fruits and fresh vegetables.

All of these factors were anticipated at the time original plans were laid. In fact, very early in the planning it became evident that the number of trains tentatively routed to California via the Northwest was greater than the Southern Pacific could handle south out of Portland, Ore., over its "Shasta route" without interference with fresh fruit and lumber movements. To ease the strain, the Great Northern and Western Pacific opened their inland "Bieber route" freight line linking Portland with San Francisco—a route never used for regular passenger service. Ten trains were handled over this route.

#### **HOW THE RAILROADS DID IT**

The coach and baggage car equipment for each special train was furnished by the originating road. This had the effect of placing the largest burden on the Eastern lines. Even though they are traditionally better supplied with passenger equipment, it was still necessary to scrape pretty close to the bottom of the barrel. Some roads arranged with the Pullman Company to use tourist sleepers as coaches in order to provide sufficient suitable equipment.

Out West, digging up enough power to handle the scout specials—along with regular peak tourist travel, plus lumber and perishable movements—presented serious problems.

The Great Northern was able to handle the fleet of extra trains operating over its line by using steam-generator-equipped freight diesels for the scout trains. These, in turn, were replaced by steam engines drawn from storage and by improved utilization of remaining diesels. On trains operated via the "Bieber route," the Great Northern assisted the Western Pacific, which was short



Illustrative of the ingenuity with which the many problems of the scout move were met are this welding



machine (left) converted to a battery charger by the Santa Fe, and a UP "tent city" (right) at East Los Angeles where incoming and out-going scouts were fed—thereby releasing scarce diners for road duty.

of power to handle both scout and peak perishable movements, by allowing the diesel units on its scout trains to run through to Oakland.

The Santa Fe was fortunate in that 26 new freight diesel units arrived the week before the scout movement started. Even so, it was necessary to reach into the freight pool and withdraw 20 3-unit F-7 80 m.p.h. and 10 4-unit F-7 65 m.p.h. freight diesels (all equipped with steam generators) to handle the scout specials. These were replaced, in part, by the 26 new diesels and in part by pulling 25 "L.U.G."\* steamers out of the round house. The Santa Fe also had to provide power for several troop trains and numerous perishable extras while the scout trains were still rolling.

The Southern Pacific and Union Pacific likewise dug deeply into their power reserves to provide enough engines for the scout specials without interference with other essential traffic.

### Servicing Ingenuity

The movement brought large numbers of eastern cars on to western lines—many of which were equipped with air-conditioning and lighting systems not commonly used in the West. Servicing these cars—and particularly handling breakdowns—presented problems of every conceivable nature. All of the western roads took unusual precautions to have competent mechanical and air-conditioning maintenance men on hand at every principal division point. On some roads they were even assigned to ride the trains.

In spite of the elaborate advance preparations, these men were often sorely tried seeking ways and means of restoring unusual types of air-conditioning equipment to service, following breakdowns, when replacement parts were not available within any reasonable distance. In many instances this problem was met by having local shops improvise replacement parts from materials on

hand. This kind of on-the-spot ingenuity was an essential ingredient of the Western roads' success in keeping the trains rolling and the equipment working.

Many of the eastern coaches used did not have large water storage capacity, such as is required on trans-continental moves. This, plus the well-known tremendous water consumption of the average boy, presented additional problems. Although the western roads arranged extra watering stops at frequent intervals—where suitable drinking water was obtainable—the hot weather and the boys' thirst caused some cars to run dry very quickly. This had a side effect of greatly increasing the demands for milk from the dining cars.

The turning and servicing of equipment in the Los Angeles area during the Jamboree was a highly integrated operation carefully worked out in advance by joint committees representing the SP, UP and AT&SF. Very few of the trains coming into the Jamboree left via the same route for the return trip. Consequently, it was necessary to do quite a bit of exchanging equipment—particularly in view of the plan advanced by the railroads of taking the boys back in exactly the same cars in which they came. Although this greatly simplified returning cars to their home road, it did present problems in Los Angeles.

### Cleaning and Servicing

After switching out its own diners, each road delivered complete trains to the line handling the outbound move. All cleaning and servicing was done by the road handling the outbound move. In this way it was possible to spot cars with low water capacity or unusual electrical or air-conditioning systems and alert maintenance forces along the line before the train started moving on the return trip.

Most of the actual cleaning and servicing was handled in the regular coach yard, by augmenting regular forces and by working extra shifts. The scout trains were worked through the yard, a few a day, until all had been cleaned and serviced. In a few cases cars were stored—and even cleaned—in neighboring yards and terminals.

\*In Santa Fe parlance, "L.U.G." steamers are engines which have been "laid up good"—placed in dead storage.





Typical of Western hospitality was this welcome extended the first Scout train into Puente, Cal.—the SP station for the Jamboree. Fresh oranges and orange juice were passed out to the boys. A sheriff's posse welcomed them.



San Francisco from the bay was a sight which thrilled boys from the East who crossed from Oakland on one of SP ferries. Sightseeing was an important part of the trip for every scout.

While en route, most roads put coach porters on the trains, one man to every four cars, who regularly cleaned the cars, tended the wash rooms, and generally assisted in keeping the trains tidy.

There were no railroad stations directly on the campsite. At four different neighboring stations the scouts and all their impedimenta were transferred to buses and trucks for transportation directly to the camping areas. The loading and unloading operations at these four stations—Puente (SP), East Los Angeles (UP), Fullerton (AT&SF), and Santa Ana (AT&SF)—required intricate organization and fine timing.

Arrivals and departures were actually spread over a 4-day period before the Jamboree began and after it ended. Even so, the task was immense.

The average train had 16 cars and carried between 400 and 600 scouts and scout leaders. Further, it had from 10 to 25 tons of baggage and camping equipment. Walkie-talkie radios and public address systems were used to organize the movement of people, baggage, trucks and buses at each station. Generally, the baggage cars were set out on adjacent tracks so the main line could be freed for following trains. All loading and unloading was done by daylight, using plans mapped out well in advance of the Jamboree and communicated in detail to every scout leader before the trek started.

## KEEPING THE BOYS WELL FED

One of the biggest railroad problems was dining cars. With each train carrying between 400 and 600 hungry boys, two meal cars were necessary. It is not customary for railroads to exchange diners in operations of this nature (primarily because of the labor problems involved), so the western roads had to resort to considerable improvisation in order to stretch their available supply of cars to serve their regular trains plus the scout specials.

The eastern roads were able to meet their requirements by doubling and lapping cars, but in the West, this was not adequate. The Boy Scout organization assisted by obtaining the use of 35 Army troop kitchens which helped

considerably. In many cases it was necessary to augment the supply of dining cars by serving box lunches, and by stopping en route for meals. The ingenuity with which the individual railroads met this problem of providing meals contributed considerably to the interest of the journey. Some of the meal stops arranged by different railroads were definitely high spots in the boys' trip.

## Master Plan for Meals

The duplication of meals en route was avoided through the preparation of master menus covering every meal of every day any scout train would be en route. One effect of this master plan—other than avoiding duplication of meals from one railroad to the next—was to restrict the number of "easy meals" (such as scrambled eggs and hamburgers) and force greater ingenuity in creating different, appetizing meals. This master plan was carefully followed wherever the scouts ate, on or off the trains. But many delectable "extras" (definitely not on the master menus) were added at meals served in camps, ranches, and communities along the line.

At East Los Angeles, the UP helped ease the strain on its diners by setting up a huge circus tent restaurant where all boys just arriving were fed their last meal before leaving on the 38-mile bus trip to the encampment, and the first meal served for those arriving from the encampment ready to embark on the outbound move.

Boys being boys, milk was one of the big problems—both at the encampment and on the trains. All railroads made advance arrangements to have ample supplies of fresh, cold milk on every train for every meal. In the West—particularly those areas where milk supplies are limited—that "took some doing." Even though every boy was provided a full quart a day, most would have easily downed two quarts, had it been available. At the camp, the problem was even worse—partly because drinking water was warm (due to the water pipes being laid on top of the ground) while the milk was cold and refreshing. Local milk companies handled the problem of supply—moving in quantities from as far away as Wisconsin.

## VITAL STATISTICS

Number of special trains operated:

75 westbound; 71 eastbound

Number of cars required:

146 baggage cars

268 air conditioned coaches

211 non-air conditioned coaches

176 air conditioned, first class sleepers

123 dining cars

35 Troop kitchen cars

Number of passengers handled: 27,110

## TOURING THE WEST

The railroad industry really went "all out" to make it possible for the scouts to tour the West en route to and from the Jamboree. In addition to allowing each council to help work out its own route and itinerary, reduced rates were tailored to fit the scouts' limited budgets, and a wide variety of side trips were offered.

When it learned the scouts were coming, the whole West literally opened its heart to them, and provided meals, entertainment and sightseeing trips every Jamboree scout will long remember. When the railroads started looking for possible side trips, sources of entertainment, and places to eat, more offers were pressed on them than could ever have been accepted.

The West—well accustomed to the debris-littered trail of the average tourist—found the scouts to be well disciplined and neat, but very lively and vitally interested visitors.

To list the many, many "extras" offered the visiting scouts by the railroads, local communities and industries, and by local organizations of every kind, would require many pages. The response was simply tremendous.

### Off-Train Meals

To help ease the dining car shortage, several trainloads of lucky boys were treated to genuine flap-jack breakfasts on the remote Two-Bar-Seven Ranch in Wyoming, and by the Rim Rock Riders, an organization of cowboys and cowgirls at Bend, Ore. Others were treated to meals on board ship at the Bremerton Navy Yard, still others at the big Weyerhaeuser lumber mills in Longview, Wash. Meals—delicious meals—were served by restaurants, Elk Clubs, hotels, scout and church groups, and civic organizations of every kind.

Scout appetites did not falter and the boys really "ate them up." One tiny restaurant near Bend, Ore., turned out 1,154 boxed chicken dinners in a single 24-hour period that are remembered with delight by all fortunate enough to have had one.

Everywhere they went, the scouts received welcomes and enjoyed experiences they will not soon forget. Those fortunate boys that stopped at Malin, Ore., (population about 500) well remember the magnificent swimming pool placed at their disposal by the town, the sightseeing tours around neighboring farms in large flatbed potato trucks, and the delicious meals at the high school. On one of the hottest days Havre, Mont., invited all scouts passing



Parchment scroll was distributed by the GN to all scouts who visited Glacier National Park and witnessed the Black-foot Indian tribal dance and exhibition.

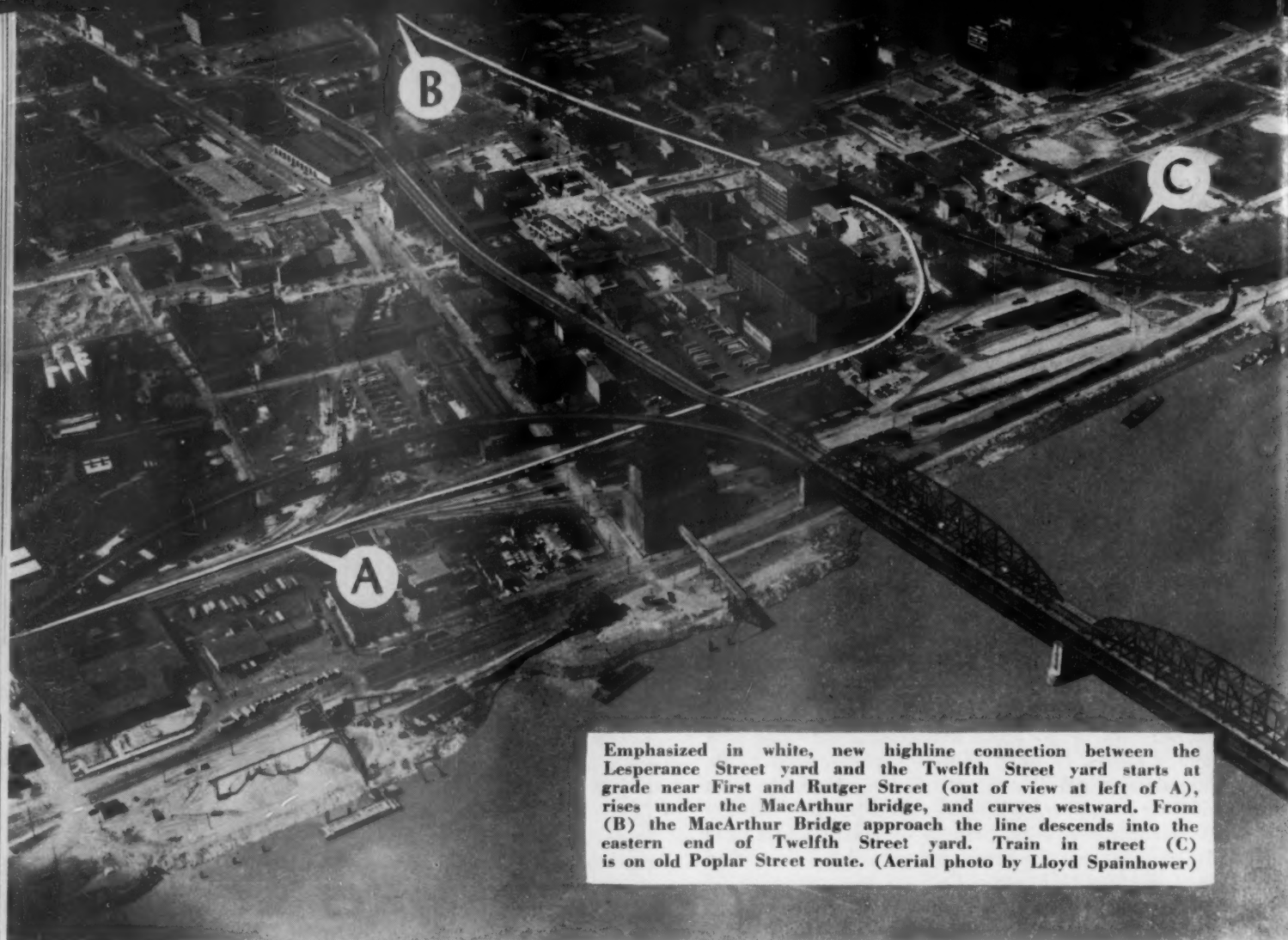
through town to stop off for a free swim in the high school swimming pool. Many of the boys had more opportunities to swim than they would normally have at home.

Not to be outdone, Whitefish, Mont., treated visiting scouts to rides around town on the fire trucks. In Gallup, N. M., local Zuni Indians rallied to the rescue of a trainload of scouts which had missed out on a scheduled side trip into Santa Fe because of washed out railroad tracks, and treated them to an informal Indian dance and entertainment that the boys termed "a honey." At Oroville, Cal., local Elks and Seascouts gave visitors stopping over for church services a not-to-be-forgotten interlude of fun and entertainment.

Every Sunday all trains stopped near a friendly church, and services for all faiths were held. Sometimes the boys marched uptown to church. Sometimes special services were held on spacious station lawns or in village parks or athletic fields.

The experience of all the scouts in meeting together and seeing our great country is well summed up in a letter written home by Ed Lechner, a scoutmaster from Grand Island, Neb. Following a visit to Vancouver, B. C., as guests of the Canadian scouts, he wrote: "We returned to Seattle on the steamer 'Princess Marguerite.' Marched to the train and to bed knowing that, the world over, democracy and friendship walk hand-in-hand."





Emphasized in white, new highline connection between the Lesperance Street yard and the Twelfth Street yard starts at grade near First and Rutger Street (out of view at left of A), rises under the MacArthur bridge, and curves westward. From (B) the MacArthur Bridge approach the line descends into the eastern end of Twelfth Street yard. Train in street (C) is on old Poplar Street route. (Aerial photo by Lloyd Spainhower)

↑ ON THIS NEW HIGHLINE . . .

## MP Trains Lifted Out of Street

Concrete trestle and steel spans, costing \$1¼ million, eliminate six grade crossings and expedite freight movement between station and yards

There have been many historic occasions in the United States where the golden spike has been driven to signify the completion of an important link in our railroad system, but there probably have not been many occasions where a distinguished group has met to watch the operation in reverse." So spoke P. J. Neff, chief executive officer of the Missouri Pacific, at a ceremony on July 23, marking the last train to be operated over that road's Poplar Street line in St. Louis. Following Mr. Neff's address and another by Raymand R. Tucker, mayor of St. Louis, a section of the track was lifted out by a crane to completely sever the line.

From that moment on all freight traffic between the road's Twelfth Street and Lesperance Street yards has traveled over a new highline route free of street crossings. Built at a cost of \$1¼ million, the structure eliminates six grade crossings, four of which involve heavily traveled thoroughfares, so that freight movement

between the two yards will be expedited. This will be especially beneficial in handling merchandise cars into and out of the new Miller Street freight station which is adjacent to the Lesperance Street yard.

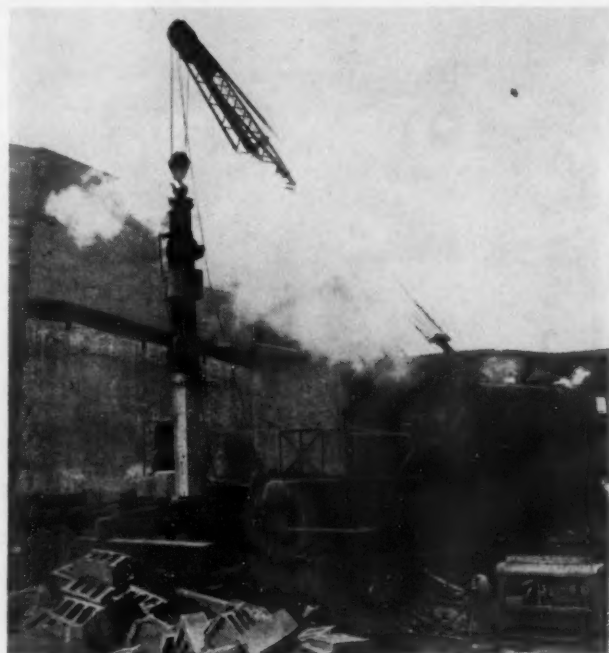
In general, freight movements into St. Louis from the South or out of the city to the South via the Missouri Pacific are handled in the Lesperance Street yard. Movements to and from the West pass through the Mill Creek Valley yards—Twelfth and Twenty-third streets. Transfers between the south side facilities and the west side terminal had to move either by the Poplar Street connection or by a more circuitous route.

Now the direct route between the two areas is the new elevated line. In addition to being free of grade crossings, the new line is somewhat shorter than the old.

The old Poplar Street route ran along the middle of the street in accordance with the stipulations of the original authorizing city ordinance. Because the street



**"POPLAR STREET SPECIAL"** as it passed along the new elevated track replacing the old Poplar Street track officially abandoned on July 23.



**PRECAST CONCRETE PILES**, made at the railroad's concrete products yard at North Little Rock, Ark., driven from track at ground level around curve near Third street.



**PILES WERE DRIVEN** for the most part from the elevated trestle level, and in some cases, as shown here, were spliced to obtain sufficient penetration.

was relatively narrow, the rail line was frequently blocked by trucks parked for loading and unloading at industries on both sides of the street. Hence trains were halted until the trainmen with the assistance of policemen were successful in getting the trucks to pull into the clear. Meanwhile, the trains would be blocking vehicular traffic on Second, Third, Fourth, Broadway, Sixth or Seventh streets.

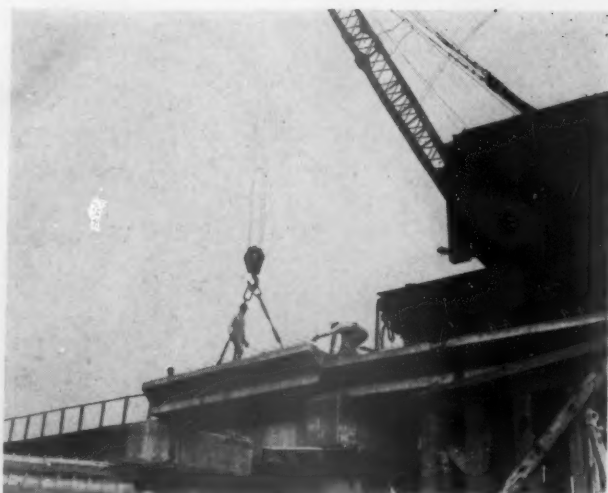
Both the city of St. Louis and the Missouri Pacific have been unhappy for many years over the delays and hazards at these street crossings. Plans to separate the grades were complicated by various other construction projects, such as the MacArthur bridge, the projected River Front Memorial, and the Third Street Trafficway.

The necessity for an elevated track was finally brought to a head in recent years when it was determined that a north-south expressway, known as the Third Street Interregional highway, was to be constructed across the present rail route.

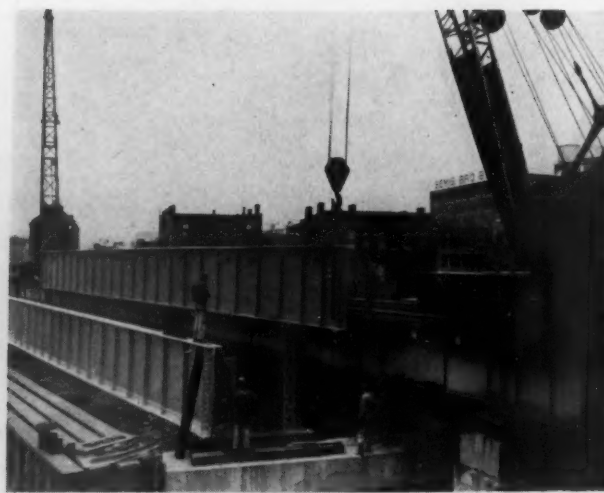
Serious discussions between the Missouri Pacific, the city of St. Louis, the Highway Department of Missouri, the U.S. Bureau of Public Roads, and the Terminal Railroad Association of St. Louis were undertaken for promoting the new expressway. From these meetings it was developed that the most satisfactory solution for the MP was an elevated track which eliminated all grade crossings.

Plans for the construction of the project were prepared





**PRECAST DECK SLABS** were set in place by a locomotive crane. The projecting reinforcing steel along upper edge will unite sidewalk slabs cast later.



**STEEL GIRDER SPANS** cross over the proposed Third Street Int regional highway. Other steel spans cross other streets and two large underground sewer lines.



**VEHICULAR TRAFFIC BACKED UP** in a matter of minutes when trains used the old Poplar Street line.



**PASSING UNDER MACARTHUR BRIDGE** the new elevated line rises on a 1½-per cent grade.

by the railroad's engineering department. Originating at grade near First and Rutger streets at the north end of the Lesperance yard, the new structure rises at a maximum grade of 1½ per cent northward from this point, paralleling the Mississippi river and passing under the MacArthur bridge, to First and Cedar streets where it turns westward on a 12-deg. 50-min. curve to become parallel with the elevated track structure of the Terminal Railroad Association of St. Louis. It then follows this general westward route to a point a short distance west of Seventh street where it crosses the MacArthur bridge double-track line and then starts its descent into Twelfth Street yard.

The concrete-trestle portion of the structure was constructed of precast deck slabs and piling which were cast at the railroad's concrete products yard at North Little

Rock, Ark. The slabs and piling were shipped by rail to St. Louis and the piles were driven and the spans erected by railroad forces.

The piles are octagonal in shape, measure 24 in. across the flats, and vary in length from 35 to 50 ft. They were driven by a single-acting steam hammer to form three-pile bents. After driving, the upper portions of the piles were cut away by pneumatic hammers to expose the reinforcing steel and, after forms had been constructed, cast-in-place concrete caps were formed at each bent. In general, the piles were driven by a locomotive crane, equipped with a steam hammer suspended from a 65-ft. boom, which traveled on the newly constructed trestle, and progressively drove two bents beyond the last laid span. However, when driving the trestle around a curve (Continued on page 96)



ON THIS SANTA FE MTC REEFER . . .

## Temperatures Stay Below Zero

Initial Trane-equipped car, in first revenue run from California to East, keeps 63-ton load at —8 to —10 deg. F. without intermediate attention

In its first revenue run from California to the East the initial Trane-equipped MTC (mechanical temperature control) refrigerator car of the Santa Fe carried 120,000 lb. of frozen strawberries from Bakersfield, Cal., to Jersey City, N. J. During that portion of the trip on the Santa Fe—4½ days—the temperatures within the car were kept between —8 and —10 deg. F. No attention to the mechanical cooling equipment was required during the trip. In a preliminary shakedown test of this car, a temperature of —12 deg. F. was reached in seven hours and —25 deg. F. in 12 hours after starting, against an outside temperature of 58½ deg. F.

The car started on this trip on June 4. The route was via Santa Fe to Chicago, Pennsylvania to Croxton, N. J., and Erie delivery at Jersey City. The consignee was Snow Crop Marketers, a division of Clinton Foods, Inc. It moved under Mechanical Refrigeration Rule 171 with refrigeration charges the same as for water, ice and salt under standard refrigeration.

This is the first of 30 cars which the Santa Fe is building at its Wichita, Kan., shops after a period of about four years spent in developing the basic requirements for MTC refrigerator cars. These cars will be used for moving frozen foods, particularly those with low freezing

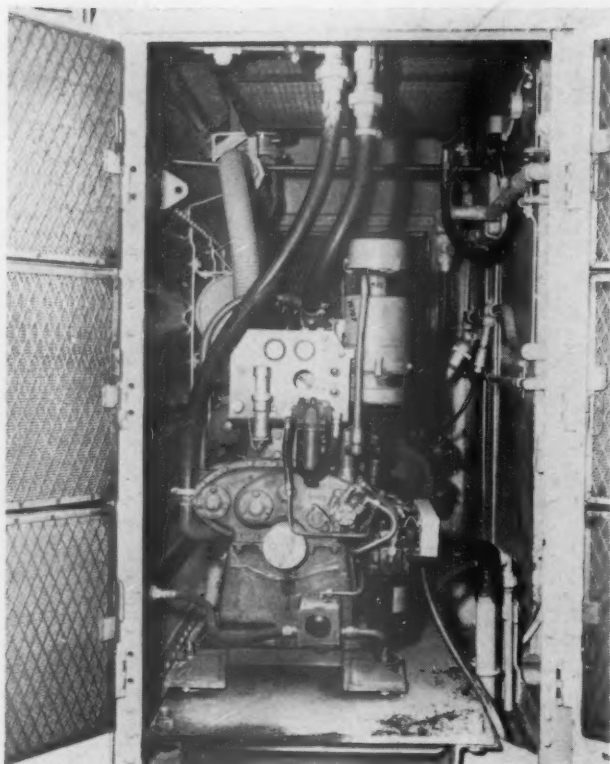
### MTC CARS A PRODUCT OF LONG STUDY

The specifications around which the refrigerating machinery of the Santa Fe MTC refrigerator cars was designed assure substantial reserve over the minimum requirements deemed essential for maintenance of proper load conditions even in the hottest weather, and are based on an investigation which started shortly after World War II. This prolonged study included building an experimental car, complete with equipment somewhat similar to that in the new cars now being built. It was fitted with an elaborate set of test instruments. This car underwent several actual trips, accompanied by a party of test engineers, as well as numerous stationary tests involving almost continuous recording of data.

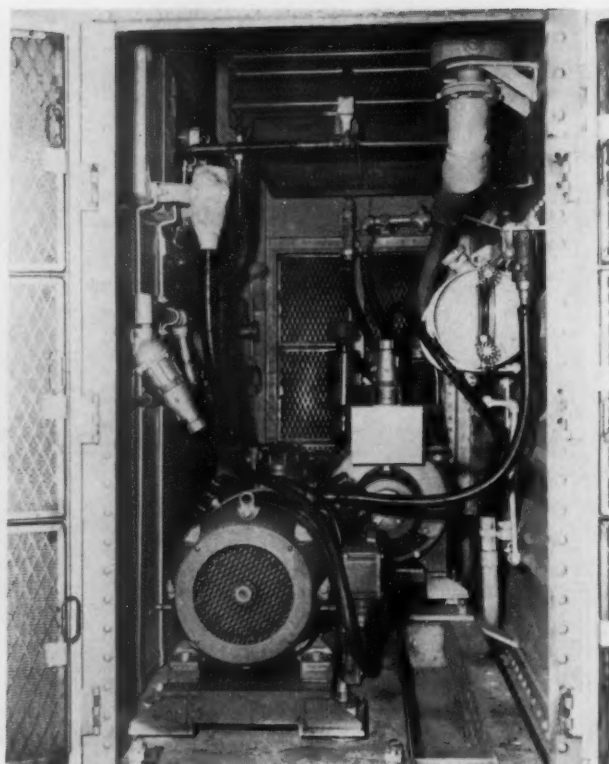
The new cars are 50 ft. long and of steel construction. They are being equipped with roller-bearing trucks, side wall racks, sliding doors, metal floor racks and strap anchors suited to modern means of material handling.

points, such as fruits in syrups or concentrated citrus juices. It is anticipated that ultimately similar cars will replace those with ice bunkers currently in frozen food service, which ordinarily are refrigerated by ice and 30 per cent salt. Ten cars each are being built with refrigerat-





**HERCULES 52-HP. diesel engine which furnishes power for mechanical cooling.**



**THE TRANE refrigerant compressor is driven by a 15-hp. electric motor.**

### DATA ON REFRIGERATING PLANT OF TRANE-EQUIPPED CAR

Engine: Hercules 6-cyl., 4-cycle, 52 hp. at 1,200 r.p.m.  
Batteries: 24-volt Exide, 12 cells.  
Generator: D. W. Onan, 25-kw., 220-volts, 3-phase, 60-cycle.  
Compressor: Trane B-516-L, nominal rating at 40 deg. F. suction and 105 deg. F. condensing, 15 tons.  
Compressor motor: Louis Allis, 15-hp. totally enclosed, 1,750 r.p.m.  
Condenser: 887 sq. ft. total surface.  
Condenser fan: Aerovent, 10,050 c.f.m. at 1 in. static pressure.  
Condenser-fan motor: Louis Allis, 5 hp., 1,760 r.p.m., totally enclosed.  
Evaporator: 554 sq. ft. total surface.  
Evaporator blowers: two Trane, 5,000 c.f.m. at 2.3 in. static pressure and 2,250 r.p.m.  
Evaporator blower motor: Louis Allis 3 hp. belt drive.

ing equipment supplied by the Trane Company, the Carrier Corporation and the Frigidaire Division of General Motors Corporation. Although the details vary somewhat, each manufacturer is furnishing components of substantially similar capacity. The equipment is placed at one end of the car in slightly more space than that occupied by one ice bunker.

Refrigerated air is discharged into a shallow plenum chamber formed by a false ceiling, perforated with small orifices to provide a pressurized distribution system. Some air flows down the side wall space to return under the floor racks to the cooling coil. It has been demonstrated that besides insuring uniform temperatures, this arrangement permits cooling the load if necessary, while retaining the advantages of a moving film of cold air surrounding the load.

Power is supplied by a diesel engine directly connected to an a.c. electric generator. Forty horsepower is the minimum requirement for the engine which operates on diesel locomotive fuel carried in four 100-gal. tanks located under the car near the center. Some cars will have four-cycle engines, while others will be two-cycle. The generator supplies 25-kw., 60-cycle, 220-volt, three-phase current.

Freon-12 compressors are used, driven by 15-hp. totally enclosed high-torque motors. The compressors have capacities of 26,000 B.t.u. per hr. at minus 20 deg. F. evaporating, and plus 120 deg. F. condensing, saturated refrigerant temperatures. A minimum of 800 sq. ft. of condensing surface is required. All coils have copper tubes and copper fins.

Condensation of the refrigerant requires 7,000 cu. ft. per min. of air at one inch static pressure. This air is drawn through both sides of the car past dynamic grills and panel filters, upward through the condenser horizontally mounted above the engine, then through the radiator, which is incorporated in the condenser frame, and is finally discharged vertically through a single hatch in the roof by an exhaust fan driven by a 5-hp. motor. This method of circulation was adopted to avoid adverse effects of side winds, as well as the nuisance of air blasts at a lower level.

The evaporator has a minimum of 550 sq. ft. of total surface, with at least 4,000 cu. ft. per min. of air at 1½ in. static pressure plus coil loss delivered by the blowers. The evaporator and blowers are in an insulated well behind the load bulkhead. The blowers are belt-driven by 3-hp. motors mounted in the engine compartment.

Auxiliaries of conventional types, including receivers,



GAGES at the control end of the Santa Fe MTC refrigerator car are protected by a sliding door in the side of the car.



LOADING INSTRUCTIONS are placed on the bulkhead at the compressor end of the car.



HINGED METAL floor racks and wood side-wall racks assure free movement of cool air.



MOVEMENT of frozen strawberries through protected doorway into the MTC car.

filters, heat exchangers, solenoid valves and expansion valves are employed. Rubber mounts are used for the power plants and compressor sets, and vibration eliminators and flexible hoses are installed in the various refrigerant and other lines.

#### Protective Devices

Customary temperature and pressure protective devices are incorporated in the machinery. A thermostat with its bulb in the return air stream controls cycling of the compressor between minus 6 deg. F. and minus 12 deg. F.

#### SPECIFICATIONS OF MTC CAR

##### Weights and Dimensions

Nominal capacity, lb. ....	127,500
Light weight, lb. ....	82,000
Load limit, lb. ....	128,000
Inside length, ft.-in. ....	44-0
Inside width, ft.-in. ....	8-6
Inside height, ft.-in. ....	8-2
Cubic ft. ....	3,054
Insulation thickness, in.:	
Floor .....	7
Sides and ends .....	6
Roof .....	8





**CARTONS** of frozen strawberries were loaded so as to utilize all available space in MTC car.

The engine and the condenser radiator fan operate continuously. The evaporator blowers also are in constant operation, except during a defrosting period.

Defrost cycles are automatically initiated by means of a differential pressure switch, which is connected to pressure-sensing taps, one below the evaporator coil and one above.

As frost accumulates, resulting in impaired performance because of lower suction pressures and reduced air flows, the air pressure drop across the coil increases to actuate the switch. The compressor and blowers stop, while electric heaters, incorporated in the coil assembly, come into operation to dispose of the frost. A timer, which is also started by the differential pressure switch, terminates

the cycle and restores the refrigeration effect quickly.

A minimum of 6 kw. of electric defrost heat is required to provide quick defrosting of the evaporator without materially warming the air in the loading space.

The power plant and the compressor sets are each secured by four bolts. Refrigerant lines to the compressor are joined by self-sealing couplings. Plug and receptacle connectors are used in the power and control wiring. Pipe unions connect the water, oil and engine exhaust lines. This arrangement permits quick replacement of these assemblies and, although equipment of three different makes is employed in the thirty cars, it will be possible to interchange the power plants or compressors if desirable.

## **MP TRAINS LIFTED OUT OF STREET cont.**

near Third street, the piles were driven by locomotive cranes traveling on a temporary surface track, the alignment of which followed that of the new trestle. At frequent intervals, double bents were constructed to provide longitudinal stability for the structure.

In certain areas the piles were driven to rock; the remaining piles were driven to a resistance of 8 to 10 blows per inch of penetration. Where it was necessary to splice piles driven to ground surface, the ground was excavated to expose the tops of the piles. Concrete was then removed from the upper 30 in. of the piles to expose the reinforcing steel for splicing with the projecting steel of another pile which was lowered into place and temporarily braced in position. Forms were then constructed in the excavated hole and a rectangular collar beam was cast around the piles, forming the splice.

The deck slabs were cast in half widths so that two were set side by side to form one complete span. In general, the slabs were 18 ft. long but a few were made to a maximum length of 24 ft. and others were made with skewed ends for fitting them on curves. They were designed for E-60 loading using an impact factor of

one-half that provided by the A.R.E.A. specifications. This was considered adequate in view of the use of diesel locomotives operating at speeds of about 15 to 20 m.p.h. over the structure. Deck plate girders and beam spans were used for crossing over the streets and two large underground sewers. The longest span is the 102-ft. 6-in. deck plate-girder over the new Third Street Interregional Highway.

The trestle is 3,954 ft. long and consists of 3,075 ft. of concrete trestle and 879 ft. of steel spans. A total of 587 24-in. and 69 16-in. precast concrete piles of various lengths were driven, and 318 precast slabs were erected. A sidewalk with steel handrail was installed along the south side of the trestle.

The track laid on the structure consists of 112-lb. rail, anchored and fully plated, supported on treated ties throughout on crushed rock ballast.

Construction was started in June 1952 and the new line was placed in service on July 23, 1953. The old trackage on Poplar street from Seventh to First streets will be removed and the area now occupied by the track will be repaved. A portion of the old line, between Ninth and Seventh streets, will be retained as a team track for the convenience of nearby industries.



Howard E. Simpson



Col. Roy B. White

## Howard E. Simpson, Salesman, Heads the B&O

New president an associate for 27 years of Col. Roy B. White, who has now become board chairman after 12 years as chief executive

A successful salesman of railroad service, Howard Edward Simpson, became president of the Baltimore & Ohio on September 1, succeeding Col. Roy Barton White, who in his dozen years as chief executive has managed as eventful and successful a regime as the B&O's many years have witnessed. Colonel White will continue active duties as board chairman, but primary executive responsibility devolves on the new president. Until he became executive vice-president a year ago, Mr. Simpson's entire career had been in the traffic department—and, until 1946, was on the passenger side of the business where, of course, the great emphasis lies upon service and in personal contacts.

Retirement of the chief executive at 70 is a strong point in Colonel White's credo. On the average, he doesn't believe officers over 70 can be counted upon to deal adequately with today's exacting problems; nor that younger officers are given the incentive they need when important jobs continue to be held by elderly men. He doesn't believe it is practicable to enforce a fixed retirement age upon an organization wherein the head does not, himself, set the example. The B&O managerial organization today is on the average a relatively young one. It did not average so young at the time when Mr. White became president, on June 1, 1941.

Organizational changes came steadily after Mr. White took over, but they were not violent. The B&O has kept open—and has increased, by its earlier retirement policy—the opportunities afforded to its younger men. Most of its more responsible positions are held today by men who were on the payroll in 1941, but generally in less important jobs. The White regime has been one of rapid advancement, on the average, for most members of the management team.

A tabulation on the next page summarizes such of the remarkable achievements of the B&O since 1941 as can be compressed into figures. But the facts behind the figures have to be told in words—which often are but feeble reflectors of the actuality they aim to convey. Probably among the more significant of these facts is the observation that Mr. White had had plenty of opportunity to attain maturity as a manager before he accepted the challenge the B&O presented to him in 1941. Having begun railroading in 1900 at the age of 17, with a railroad later absorbed by the B&O, young White was a chief dispatcher at the age of 24 and a division superintendent at 26. When he went from New York to Baltimore in 1941, he had already had 15 years of experience as a chief executive—first with the Central of New Jersey and then with Western Union.



## SOME MILEPOSTS OF THE WHITE REGIME ON THE B&O

**REVENUE TON-MILES**—in 1941, B&O handled 11.77 per cent of the revenue ton-miles of the railroads in the Eastern district. In 1953, its share was running at 14.3 per cent.

**COAL TRAFFIC**—in 1941 B&O handled 8.43 per cent of the bituminous coal production of the U. S. In recent years B&O's share has hovered around 10 per cent; so far in 1953 it is 10.6 per cent. Bituminous tonnage originated in B&O in first 6 months of 1953 was 43.27 per cent over same period of 1941.

**OTHER FREIGHT TRAFFIC**—in 1941 B&O originated about 33 million tons of freight other than coal. In first 6 months of 1953 it originated 19,188,343 and showed an increase of 21.68 per cent over first 6 months of 1941.

**MOTIVE POWER**—in 1941 B&O had only 53 diesel-electric locomotive units. Today it has 822 in service or on order, including 478 road freight units, 74 passenger units and 270 switchers. In addition B&O Chicago Terminal and Staten Island Rapid Transit owned 26 units.

**OPERATING EFFICIENCY**—in 1941, the average net tons per train on the B&O was 1,042. In June 1953 it was 1,602. In 1941, gross tons per train were 2,256 and in June 1953 gross tons per train were 3,197. Gross ton-miles per hour of crew time were 24,474 in 1941 and 36,770 in June 1953. Load per car was 31.9 tons in 1941 and 38.7 tons in June 1953.

**FINANCIAL CONDITION**—in 1941 the B&O had a total outstanding indebtedness of \$676,768,927. Estimate for 1953 is \$571,763,761, a reduction of 15.52 per cent. In the same period annual interest charges have been reduced from \$30,305,365 to \$24,642,000, a reduction of 18.69 per cent.

**BRIDGES AND STATIONS**—995 bridges have been rebuilt or reconstructed since June 1941 at a cost of \$26,977,623, excluding maintenance. Improvements to passenger and freight stations and piers and wharves cost \$29,600,980.

**ROADWAY AND TRACK**—635 projects to improve roadway in the same period involved expenditures of \$27,628,896. \$13,219,332 went for rail improvement—including the laying of hundreds of miles of new heavy-duty rail.

**ENGINE AND CAR FACILITIES**—Since 1941 434 projects undertaken for the improvement of engine and car servicing facilities cost \$8,960,545.

**DIESEL FACILITIES**—In the same period 88 diesel installations (including repair shops, fueling and sanding stations, etc.) were completed at cost of \$6,355,261.

**SIGNALS AND COMMUNICATIONS**—Up to the end of 1951 some \$11.4 million had been spent for improved signals and interlocking including two train control installations; and \$2,350,000 had been invested in improved communication systems, bringing an annual saving of \$500,000.

Almost all of his business career prior to his becoming a chief executive—26 years in all—had been spent in occupations involving supervisory duties. During his incumbency on the Jersey Central, he had become well acquainted with many of the nation's leading industrialists—with whom he frequently discussed managerial methods.

Both by length of observant experience and by precept, therefore, Mr. White went to Baltimore in 1941 with a much richer background in executive leadership than most men have when such duties devolve upon them. Furthermore, having come up through the ranks on the B&O, he knew the property and its personnel thoroughly. Only a few months after he took office, along came the war—which helped the railroad trafficwise, but in other respects complicated its managerial problems, and delayed some of its important innovations till the postwar period.

When Mr. White took over, the B&O had \$18 million in its cash account with \$11 million contingent interest unpaid. Its cash account stands now at approximately \$49 million, with no interest arrearages. Under the modification plan of 1938, long-term obligations were to be written down \$100 million and this transaction was completed early in the White regime. An early maturity of \$4 million was also met—thus paving the way for the adjustment plan of 1944 which spaced out maturities, so that they were no longer a hazard. While the outstanding equipment obligations by the end of 1953 will total \$71 million more than at the end of 1941, the total of all obligations (bonds, notes and equipment obligations)

will by the end of the current year come to \$105 million less than at the end of 1941. Annual interest charges run \$5-2/3 million less today than in 1941—all this in spite of a program of capital improvement of unprecedented magnitude.

One of the most far-reaching innovations on the B&O in recent years is its comprehensive system of budgetary control, instituted in 1946 and under the direction of Walter L. Price, vice-president, finance and accounting. The budget starts with an estimate of traffic volume, which is corrected daily as the previous day's carloadings are reported. Practice has given skill in these estimates so that—barring strikes and disasters—it has been found that both revenues and expenses can be forecast within a margin of error of less than 1 per cent.

Expenditures are kept in line with revenues, to accord with predetermined ratios—with the goal of carrying down a definite and predetermined ratio of gross into net. Five years ago the net-income-to-gross-revenue ratio was less than 2 per cent. Now it is 6.17 per cent, and management hopes it soon will be 10 per cent.

In setting up budgets of expenditure the B&O makes comparisons with other railroads it regards as comparable. It found that the B&O was high in locomotive repair costs and in yard operating expense. Increased dieselization has brought down the locomotive repair costs and yard improvements have reduced the expense ratio in that sector. The B&O has spent over \$100 million on its program of dieselization—with 759 units in service

and more on order. It estimates its annual economies from the change-over at \$45 million.

In the field of operating economy, the B&O has pursued a systematic program for the elimination of red-ink passenger trains. The evidence is thoroughly prepared by a team of specialists and is imparted to interested persons before formal discontinuance programs are begun. So far, 79 trains have been eliminated at an annual saving of \$5 million.

When Colonel White went to Baltimore in 1941 he did so in the belief that "we can sell more of what we make," i.e., transportation service. The record indicates that this belief was correct. In 1941 the road produced 11.7 per cent of the Eastern district's revenue ton-miles. In the first half of 1953, this ratio had risen to 14.3 per cent. In 1941, the B&O moved 8.4 per cent of the nation's bituminous coal tonnage. In the first half of 1953, its share had risen to 10.6 per cent. The increase is attributed to the opening up of new coal fields in B&O territory; to the activities of the industrial development department (which has seen 3,161 new industries develop on-line since 1941, with 605 substantial expansion projects by industries already there); and by vigorous merchandising of the company's widely publicized "Sentinel Service" ("siding-to-siding dependability" on carload freight and automatic records notification in any event of schedule interruption) and "Time Saver Service" on less-carload. These two services were described in *Railway Age* in the issues of June 7, 1947, and May 20, 1950.

### **Training for Management**

Certainly two of the main interests of the White regime have been intensified sales effort and the selection and training of management and supervisory personnel. These two interests were merged in a training program for traffic sales forces which was inaugurated in 1946. The central activity in this program is a two-weeks "conducted" trip over the road during which the trainees are made familiar with the road's principal facilities. The entire course requires four weeks (see *Railway Age* of October 6, 1952, for a description), and 375 of the company's traffic representatives have taken it. A similar course is provided for passenger department personnel (*Railway Age*, January 1, 1949) and the accounting department has an educational program of its own. In the mechanical department there is a course of technical training supplementary to the apprentice training program.

In July 1950 the company inaugurated its technical graduate training course for graduate engineers. The purpose of this course is to train technical college graduates for responsible positions with the company, and to establish a reservoir of well-trained men from which supervisory, junior and senior officers' vacancies may be filled. A group of engineers enters this program each July.

In April 1952 the company begun its supervisory development program (*Railway Age*, December 22, 1952). The first unit of this program, a human relations course, was inaugurated in the operating department. To date more than 800 officers and supervisors have completed the five-day course. In April 1953 an employee training program (non-technical) was established. This six months' program is designed to give selected employees

with five or more years of company service an opportunity to observe and study, under careful supervision, the functions and operations of the various departments of the company.

The transfer of the B&O's executive leadership to lifetime railroader Howard Simpson—whose primary training was in sales—is a logical continuation of the program for the railroad which the retiring president inaugurated. Mr. Simpson is 57 years old. He began his railroad career at the age of 16 as a clerk for the Central of New Jersey. After service in the Navy during World War I, he returned to the Jersey Central in 1919 as a rate clerk and in 1922 went to the passenger department as a city agent. For three years he was advertising agent and thereafter he moved up in the road's passenger department to assistant general passenger agent.

In 1931 he transferred to the Baltimore & Ohio as general eastern passenger agent and in 1944 had risen to the position of general passenger traffic manager. Two years later, Colonel White (who, of course, had known Mr. Simpson as one of his promising subordinates on the Jersey Central) gave Howard Simpson the opportunity to extend his field of responsibility to include the freight traffic department; and he became the B&O's assistant vice-president, traffic. In 1947 he became vice-president, traffic—a position which does not come too frequently to men whose primary experience has been on the passenger side. Yet, not more than three years later, your reporter heard one of the country's leading purchasers of freight service say of him:

"I'd put Howard Simpson down as one of the railroad industry's most effective freight traffic men. He doesn't know all the details about rates, but he travels with an able rate man at his side. He understands principles—which is the important thing, and his long experience in the passenger department has made him service-minded and sales-minded."

### **"Service Can Be Merchandised"**

As a freight man, Mr. Simpson spent some time learning his way around before he assumed all the responsibilities attributable to his position—but assume them he did, in due course. He has said that his main interest as a traffic man has lain and still lies in the direction of getting and keeping on the railroads—no matter which particular railroad—the traffic economically fitted to rail movement; and that getting his own road's share of the rail-borne business has to be subordinated to that first objective. "Neither the B&O nor any other railroad is going to haul the traffic that doesn't move by rail at all; and railroads ought to go along with other roads in their desire to experiment with means for retaining or recapturing traffic, whether such experiments are to the selfish interest of the individual roads involved or not." He believes firmly that freight service can be successfully merchandised like any other commodity, and by recognized merchandising methods, including the judicious use of advertising.

Mr. Simpson was elected executive vice-president a year ago, and during the intervening period has had wide experience, under Colonel White's guidance, in familiarizing himself with those aspects of the top management job which lie beyond the scope of the traffic department.





**RADIO BETWEEN LOCOMOTIVE AND CABOOSE** saves time for this ore train as it departs from Kelly Lake yard.



**THE GREAT NORTHERN HAS THREE ROUTES** between mines on the Mesabi Range and docks at Allouez.

## How Radio Helps Record Ore Move

### ... ON GREAT NORTHERN IRON RANGE LINES

Improved service and better utilization of cars, locomotives and tracks result of installation of two-way radio in fixed stations, locomotives and cabooses on mine runs and ore trains from Mesabi Range to Allouez

An extensive Great Northern installation of two-way radio in offices, locomotives and cabooses is proving an important aid in expediting the 1953 record movement of iron ore for approximately 100 miles from mines on the Mesabi Range to docks on Lake Superior at Allouez, Wis.

Lake shipping extends for about eight months, from April to November. During this season of navigation the Great Northern hauls daily an average of 2,500 loaded cars (with about 65 long tons of ore per car) from the mines to the docks, and unloads them into lake boats. For the 1953 season up to now, the GN has handled more ore than in any other previous comparable period. About 5 million tons were moved in June. A new record was established in five successive days in July, when a total of 1 million tons of ore were hauled to Allouez and loaded in boats.

An enormous organization of equipment and trained men are engaged in this ore movement. As expressed by an operating officer, "the new radio is like a can of fine lubricating oil—a drop here and a drop there, in the tight spots—keeps the whole machine in perfect coordination. I do not know how we got along before, without the radio."

In the overall program, the first operation is the local mine run service to deliver empty cars to mines,

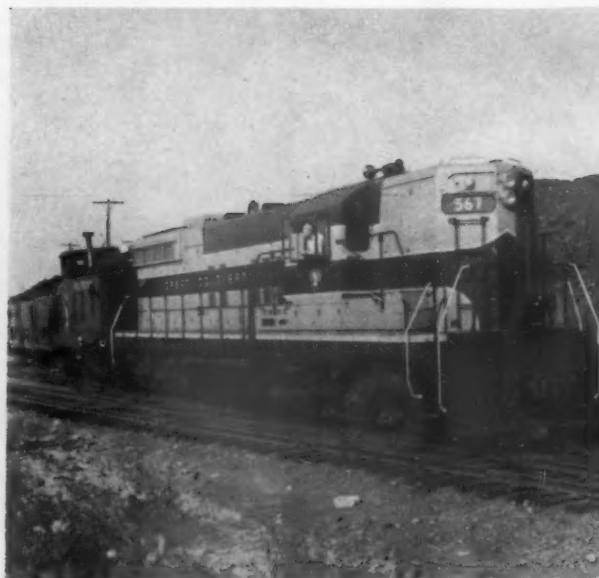
and bring back loaded cars to central points where road trains are made up. With the 55-mile line along the Mesabi Range, extending southwest from Virginia, Minn., to Grand Rapids, the Great Northern serves about 52 iron ore mines. The GN center of operations in this area is Kelly Lake yard, 3.7 miles west of Hibbing. There are secondary yards or small assembly yards at Nashwauk, Virginia, and Canisteo.

From these central points, local mine run crews deliver about 2,500 empty cars daily to the mines and bring back approximately the same number of loaded cars. Twenty-seven local crews are assigned to this local mine run service. Fifteen of these crews use road-switcher diesel-electric locomotives, which are equipped with radio. Twelve other crews, in this mine run service, use steam locomotives, which have not been equipped with radio because they are to be replaced with diesels within the next year or so. Eight radio-equipped cabooses are used with steam locomotives to give crews contact with the fixed stations.

These mine run crews work under the direction of the chief dispatcher at Kelly Lake, whose responsibility includes both delivering empty cars to all mines as needed and pulling the loads promptly to meet schedules for loading various classifications of ore in the lake boats on specified dates.



**CHIEF DISPATCHER USES RADIO** to communicate with operators, enginemen and conductors.



**RADIO-EQUIPPED DIESEL SWITCHERS** are used by 15 crews to set out empties and pick up loads at the ore mines.



**RADIO IN EACH CABOOSE** is conveniently located at the conductor's desk.



**TRAINMASTER'S AUTOMOBILE RADIO** keeps him in touch with the dispatcher and crews on all runs.

The radio is serving as "the long arm" of the chief dispatcher to keep him in constant touch with the trainmaster in his automobile and with the mine run crews, to change instructions as required, and to handle emergencies that otherwise would cause serious delays. For example, in one instance, the chief dispatcher received an order to rush the movement of several loaded cars from the Wyman mine. He used his radio to call a nearby crew to direct them to go back to the Wyman mine to pick up these cars. Without the radio, the cars would have been held up until a crew from a considerable distance could make a special move to the mine, with resulting delay to the ore.

In numerous instances the chief dispatcher gets last minute requests for empty cars. Without radio, when a crew left Kelly Lake with cars to be delivered to mines,

there was not much chance for the dispatcher to reach them to change instructions. Now, with the radio, he can keep in constant touch with every crew, to determine the status of loads and empties at each mine when crews arrive. As empties become available they can be moved on to other mines to meet last minute requests. Thus the Great Northern is enabled to use its cars more effectively, and at the same time render better service to shippers.

Previously, serious delays sometimes resulted from minor derailments on mine tracks, or because of defects found when loaded cars were being pulled from mines. Now, with radio, the crews call the chief dispatcher, and the necessary action is taken to minimize such potential delays.

The trainmaster's automobile is equipped with radio





**TRANSMITTER-RECEIVER and POWER SUPPLY** on each caboose are installed under one of the bunks.

which he uses to keep the chief dispatcher advised of his whereabouts. When any of the mine run crews encounter difficulty, the chief dispatcher can advise the trainmaster, and he proceeds at once to the location of trouble. In numerous instances this has reduced delays.

The next step in overall operations is the movement of trains from yards on the Range to the yard near the dock at Allouez, approximately 100 miles. For a portion of the distance between the Mesabi Range and Allouez, the GN has three rail routes.

#### **Road Trains to Allouez**

As shown in the map, the main line of the GN from Duluth extends via Brookston, Swan River, and Grand Rapids to Grand Forks and on to Minot, N. D., where it connects with the main line from St. Paul through to Seattle. From Allouez, double track extends 4.25 miles to connect with the main line at Saunders which is 10.35 miles west of Duluth. The main line is double track from Saunders west through Brookston to Swan River.

A single track line, built in the early days as a logging road, extends 25.45 miles from Swan River to Kelly Lake.

This line has comparatively heavy grades and is now being used exclusively for westward trains of empty ore cars moving to Kelly Lake. In more recent years a single-track line, with much easier grades, was built from Kelly Lake via Casco, 50.32 miles to Brookston where it connects with the main line. About two thirds of the ore is moved in trains that are made up at Kelly Lake to take the 99.6-mile route via the low grade line through Casco to Brookston, and from there to Allouez.

Other trains, which handle about one third of the total tonnage, go west from Kelly Lake to pick up loaded cars at Nashwauk, Canisteo and other locations. These trains continue west to enter the main line at Gunn, and go east through Swan River, Brookston and Saunders to Allouez. The distance on this route from Kelly Lake to Allouez is 131.48 miles. Trains of empty cars are routed from Allouez via Saunders to Swan

River and from there via Bengal to Kelly Lake, about 109.2 miles.

The road train crews operate from headquarters at Allouez yard. The normal procedure is to take a train of 180 empty ore cars from Allouez yard to Kelly Lake, or perhaps Nashwauk, where a train of 180 loaded cars is made up to return to Allouez yard. Trains are timed to depart from Allouez yard about two hours apart. About 4 hours is required for a run from Allouez to Kelly Lake; about 5 hours for a return to Allouez via Casco, or about 6 hours via Canisteo and Gunn.

Each of these road trains is operated by a three-unit diesel locomotive. An "A" unit, with an engineman's cab, is on each end of the locomotive, and complete independent radio equipment is provided in each cab. A total of 7 locomotives including 14 "A" units are so equipped. Eight cabooses, used in a pool in this road service, are equipped with radio.

#### **Five Fixed Stations**

As a part of the project, radio was installed not only in the chief dispatcher's office at Kelly Lake, but also in offices at Canisteo, Swan River, Brookston and Saunders. Also the radio-equipped automobile used by the trainmaster is used in communications with fixed stations and road trains. The radios in the fixed stations, locomotives, cabooses and trainmaster's automobile, operate on the same frequency (160.65 mc.). Therefore, within range of up to about 25 miles, all calls are heard in fixed and mobile stations.

The radio is used between the chief dispatcher's office and road trains when approaching or leaving the Kelly Lake area, as well as when in the yard. In one instance the operator at Swan River used the radio to tell the engineman of an approaching train to "take it easy, let 422 go out, then you will not have to stop." Movement through the station is protected by interlocking signals but, with radio, it is possible for the operator to give the engineer additional information to avoid stopping a long train.

When road trains are beyond range of the chief dispatcher's radio, he uses conventional telephones to one of the other four fixed stations, and requests the operator at such station to use radio to talk with crews on trains in their areas. All train orders and clearance cards are issued via the regular train dispatchers' telephone system.

At Kelly Lake or Nashwauk when road crews are coupling to trains of loaded cars, the radio is used between the engineer and conductor when pumping the train line to full pressure, and when testing the air. When all is ready, the engineman gets a verbal highball by radio. When leaving a yard or siding, the conductor uses the radio to tell the engineer where the caboose is with reference to the switch—"four more cars"—"we are out on main line now—lets go." Trainmen in the caboose keep a constant watch of the train, and if they see any indications of dragging brakes, hot boxes or other trouble, they radio the engineer at once. This obviates delays for hand signaling, or damage that might be caused if the "air is pulled" at the rear of the train.

If the engineer reduces speed, or stops his train for



**40 BELOW... 10 FEET OF SNOW... TRAINS ON THE GO!**

**R**ugged, temperature-proof Caterpillar D6 Tractors stopped disaster in its tracks in Monarch, Colo.

Ten feet of snow fell in January, smothering tracks of the Denver & Rio Grande Western Railroad. The railroad hauls limestone flux from pit to blast furnaces. Stoppage of the rock would have shut down the huge mills. The temperature dived to 40 below zero. But in one day trains were running.

Reports Harry Bender, Salida, Colo., owner of the D6 pictured working above:

"During the emergency we worked night and day in severe storms. We started our Cat\* machines many mornings at 40 below zero without trouble. We kept the trains running."

A gratifying performance, but not unusual. Caterpillar equipment is engineered to whip nature's extremes.

It was designed to start—and to work—at 40 below zero. We call it "positive starting." That means an independent gasoline engine starts the Diesel. It spins and

conditions the engine before any load is placed on it. It circulates lubricating oil, warms the water, intake air, liners and other parts of the Diesel. It has power to spin the Diesel at full compression for as long as it is necessary. That—and only that—is "positive starting."

Caterpillar offers a full line of year-round, all-purpose off-track equipment that is ready to work when you need it the most. Your Caterpillar Dealer knows railroad problems. He'll be happy to demonstrate the equipment that will cut your costs while it increases your service.

Caterpillar Tractor Co., Peoria, Illinois.

**CATERPILLAR\***

\*Both Cat and Caterpillar are registered trademarks—®

**NAME THE DATE...  
YOUR DEALER  
WILL DEMONSTRATE**





**ENGINEER'S RADIO CONTROL** and handset are placed on a bracket at his left.

some special reason, he uses the radio to advise the conductor, so he will know the circumstances and act accordingly, without having to walk to the front of the train. Especially on the Kelly Lake-Gunn section, the radio is used like a party telephone line, between the chief dispatcher, mine crews, road train crews and the operator at Canisteo. All parties know the locations of others, and especially can follow the progress of each road train as it passes down this line.

Recently a road crew made up a train of 180 loaded cars at Nashwauk and proceeded toward Gunn. When passing Marble, a mine run crew on a spur used the radio to tell the road train crew that a brake shoe was stuck and smoking on a car near the center of the train. By manipulation of the air brakes, the engineer was able to "kick off" the brake, and the train proceeded without stopping. Prior to radio, such a circumstance might have developed into trouble and a delay to the train.

By radio conversation with crews of road trains, the operators at Canisteo, Swan River, Brookston and Saunders can know the locations of and progress being made by these trains. If special circumstances develop, the operator calls the dispatcher so that he issues instructions at once that will minimize delays. In such instances, the chief dispatcher calls the trainmaster in his automobile, and this enables him to proceed at once to trains that are in difficulties. Thus, in hundreds of instances—all of which may be different—the radio is being used day after day, not only to save a few minutes here and there, but, of greater importance, to minimize or eliminate serious delays or accidents when special circumstances arise.

Ordinarily the dispatcher uses conventional line wire connected telephones for calls to operators at the offices along the line. However if the line wires fail, the radio can be used for conversations between the offices so equipped. Not long ago a crew operating a power derrick accidentally damaged the pole line so that the circuits were out of service for 16 hours. In the meantime, all communications between Kelly Lake and Canisteo were handled by radio, the train dispatcher and operators using the same

procedure and precautions they would have used if the train orders had been transmitted by telephone.

The radio equipment in the fixed stations and on the locomotives and cabooses is identical and interchangeable, being the Bendix Type MRT-6hd, rated at 30 watts output. The transmitter-receiver and power supply equipment are mounted in one case which is plug coupled, and can easily be replaced as a whole if not functioning properly. Each of these radio sets operates on 117 volts a.c. On a locomotive the 117 volts a.c. is supplied by a Cornell-Dubilier vibrator-converter which is fed from the 64-volt engine starting battery. On each caboose the 117-volts a.c. is from a Cornell-Dubilier vibrator-converter, fed from a 12-volt 350-a.h. Exide lead battery. This battery is charged by an axle-driven 1-kw. 12-volt d.c. generator and control, furnished by the Safety Car Heating & Lighting Co. This generator has capacity to maintain the radio battery charge and also to feed electric lamps on the conductor's desk, and general illumination of the caboose as needed.

The generator is driven by Dayton Rubber Company V-type belts between the axle pulley and the generator, which is in a special cabinet above the floor level of the caboose. The controllers are adjusted so that the generator cuts in to charge the battery when the caboose attains a speed of 10 m.p.h. on road trains, or 4.5 m.p.h. for mine runs.

Under ordinary conditions the battery gets enough charge in road service, but, if not, it is given an extra charging when the cabooses are in the yard at Allouez or at Kelly Lake. A double-pole, double-throw switch prevents the radio being turned on while the battery is being charged from an outside source. This prevents damage to the converters.

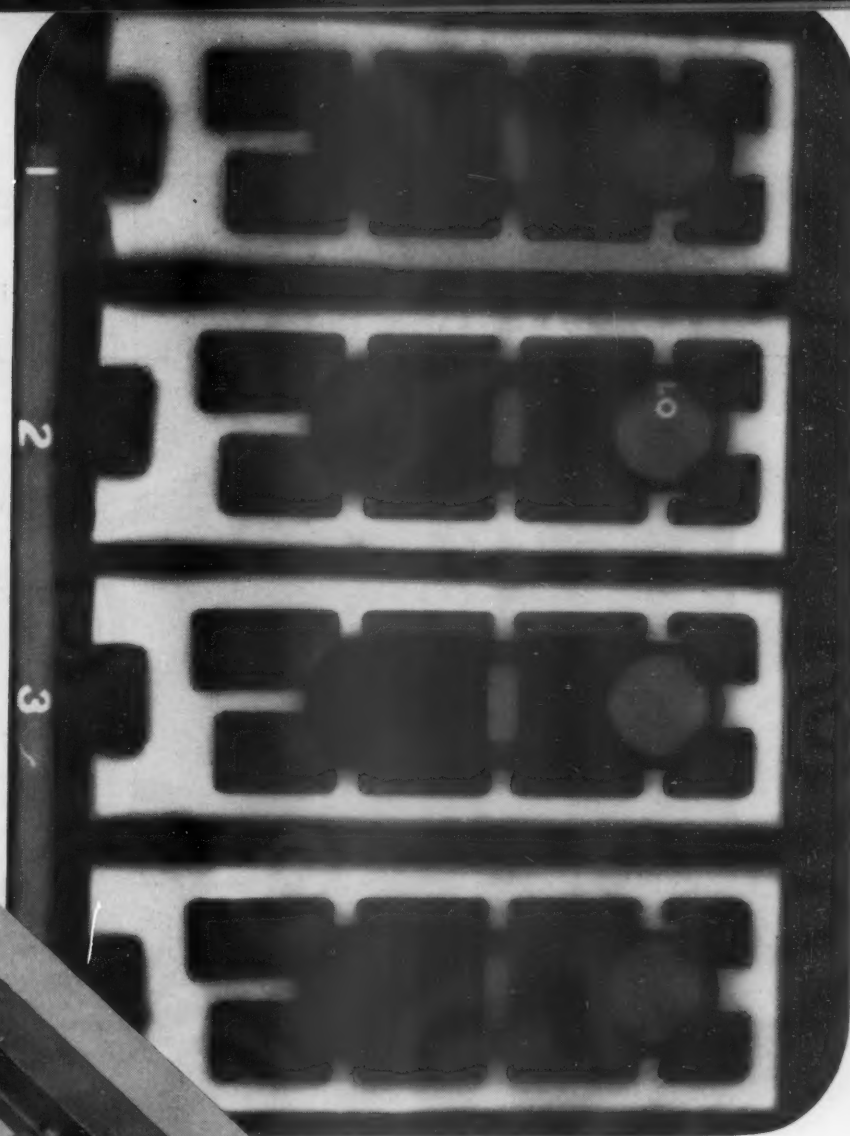
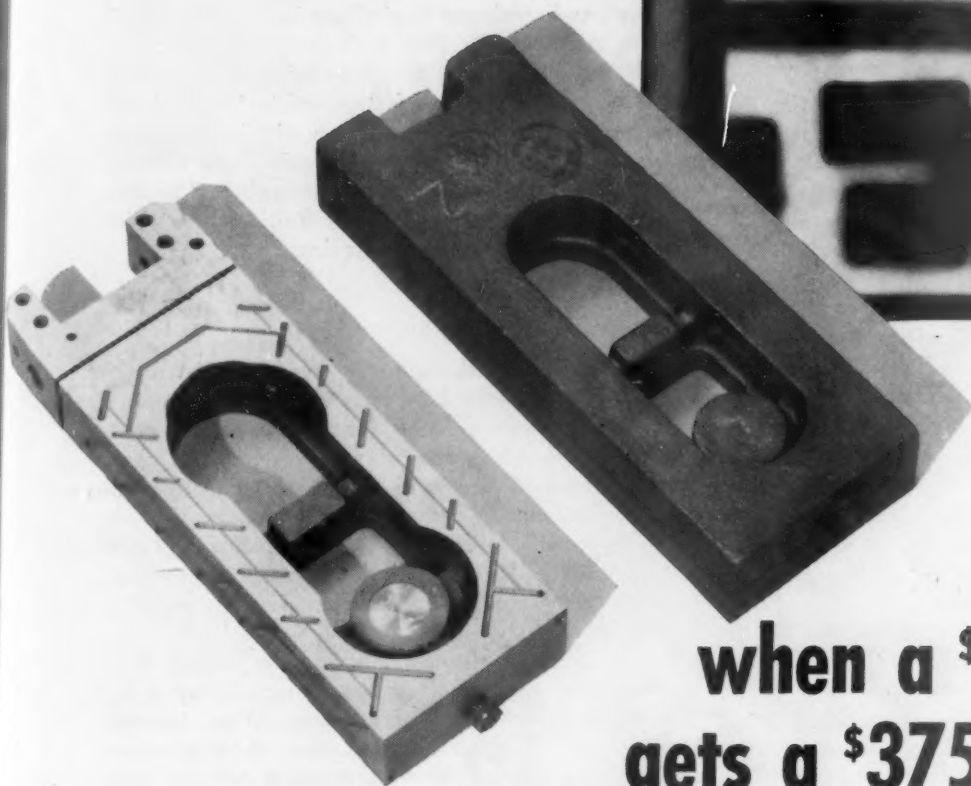
### **Omnidirectional Antennas**

At the five fixed stations, the antennas are the Workshop three-stack omnidirectional type 3HWA. At Kelly Lake the antenna is on top of a 100-ft. floodlight tower 1,000 ft. from the office. The radio transmitter-receiver equipment, placed at the base of the tower, is controlled remotely from the set in the dispatcher's office. At the other four fixed stations the antennas are on top of 100-ft. wood poles, set 10 ft. in the ground and guyed four ways. The type RG-17 U coaxial cable from the radio equipment up to the antennas as well as the special connections involved were furnished by the American Phenolic Company.

The radio equipment throughout this territory is inspected and maintained by a radio maintainer with headquarters at Kelly Lake. He checks the operation of the radio on locomotives and cabooses during the time they are at Kelly Lake. He is furnished a sedan-delivery type motor truck which he uses to go to the various fixed stations to inspect the radio. Likewise he uses the truck to replace radio sets on mine run locomotives or cabooses that fail in service. Radio sets that fail on road trains en route from Kelly Lake to Allouez are changed out at Allouez, and shipped to Kelly Lake for repair.

This radio project was planned and installed by Great Northern forces, under the direction of Allen H. Fox, superintendent of communications, and L. H. Williamson, electrical engineer in the mechanical department.

## **RADIOGRAPHY** prevents waste



Radiograph of an iron casting  
for a reciprocating ram.

## **when a \$2 casting gets a \$375 treatment**

This is a casting for a reciprocating ram. It is to be machined and hand scraped to a final flatness of less than .0001 inch. Should porosity show up during machining, the cost of work done and heat treatment is wasted. The part must be scrapped, not scraped.

But radiography avoids that. By x-raying every casting, flaws are discovered before work is started . . . before hundreds of dollars have been invested in machining and heat-treating costs.

This is another example of the savings possible through radiography.

If you'd like to be sure all your castings are sound—if you'd like to know ways to improve yield in production runs—get in touch with your x-ray dealer. He'll gladly talk it over. Or, if you like, write us for a free copy of "Radiography as a Foundry Tool."

**EASTMAN KODAK COMPANY**  
X-ray Division, Rochester 4, N. Y.

**Radiography . . .**  
another important function of photography

**Kodak**  
TRADE-MARK





**F**red A. Poor, chairman of the board of Poor & Co., died of a heart attack in Chicago on August 26, at the age of 83. His passing is a matter of personal interest to railroad men throughout the country, for his circle of friends is said to have been unsurpassed by any man in the railroad supply business.

Always a man full of life and energy, Mr. Poor lived every minute to the utmost. Although a diligent, hard worker, he had a great capacity for enjoying the smaller things of life. At times, he even made work seem like fun. Ernest E. Norris, former president of the Southern, once remarked: "The only trouble with Fred Poor is that his vacations overlap." In later years he kept a close eye on the affairs of his companies, but he did like to take time out now and then for a little enjoyment. Accosted on the street around 2 p.m. on a summer's day, he would usually say, "I'm on my way out to the plant." That always meant he was en route to the ball park.

Born in Andover, Me., Fred Poor grew up in Port Chester, N.Y. where he started his working career as an agent for the Adams Express Company. The spirit of adventure soon led him to Chicago and a job with the Hall Signal Company installing block signals on the Chicago & North Western and the Illinois Central—even though he knew nothing about electricity. But he started learning, by means of a four-year correspondence course. Then he joined the IC as a signal maintainer, working his way up to superintendent of signals.

In 1900 he was persuaded to work for the Weber Rail Joint Company as a salesman. He has often remarked that he knew nothing about salesmanship when he took that job—a significant comment in view of his subsequent highly successful sales career. His work with track people directed his attention to the problem of creeping rails. Although there were several anticreeper devices on the market, none was too successful. In the course of time he designed a new two-piece rail anchor which really worked. During this same period, his employer and the

## Fred A. Poor Dies

**"Best known man in the railroad supply business" active to day of his death**

Continuous Rail Joint Company merged to form what is now known as the Rail Joint Company. To prevent himself from being "merged out of a job," in 1906 he formed a company of his own—the Railway Specialty & Supply Co.—to market his anti-creeper. The Rail Joint Company did not drop him, as he feared it would, but instead sent him abroad as its foreign sales representative—a job Fred Poor disliked intensely. He wasted no time getting himself back into this country as Rail Joint's western district sales representative.

In 1910 he left Rail Joint and together with an old associate, Philip W. Moore, renamed his Railway Specialty & Supply Co., the P&M Company (from Poor & Moore) and continued specializing in the sale of anti-creepers. Although the P&M Rail Anchor (invented by Fred Poor) did work, it was a two-piece device which was both expensive to manufacture and to install. About 1920 he met James M. Fair, then division engineer, maintenance-of-way of the Pennsylvania (now retired) who had perfected a one-piece, easy-to-apply rail anchor. P&M undertook to market the Fair Rail Anchor, which has proved highly practical in service.

### **Diversity of Products**

By 1928 the original small company had grown large, and was known as the P&M Industries. It was reorganized, and named Poor & Co., for the purpose of broadening its field. The range of railroad products which Mr. Poor brought together was wide—ranging from the Peerless Equipment Company's draft gear to Maintenance Equipment Company's rail lubricators and rail layers. At the same time, the Rail Joint Company—Mr. Poor's former employer—was brought into the organization.

To the time of his death, Fred Poor continued an active interest and control in the affairs of Poor & Co. and its 16 subsidiaries and affiliates. At an informal luncheon on the day of his death, some of his associates were chiding him on the close attention he paid to all the details of management. Fred Poor replied, "Cheer up, you know I won't be chairman more than seven years longer."

Victor C. Armstrong has been elected chairman of Poor & Co., succeeding Fred Poor. Mr. Armstrong is a long-time business associate and close personal friend of Mr. Poor. Their acquaintanceship goes back to the time when the Rail Joint Company was first formed. At that time they both worked for the company. Since 1928, when Mr. Armstrong joined Poor & Co., he has been active with Fred Poor in the management of the company. Mr. Armstrong was vice-chairman of the company until 1951 when he retired in the capacity of consultant.



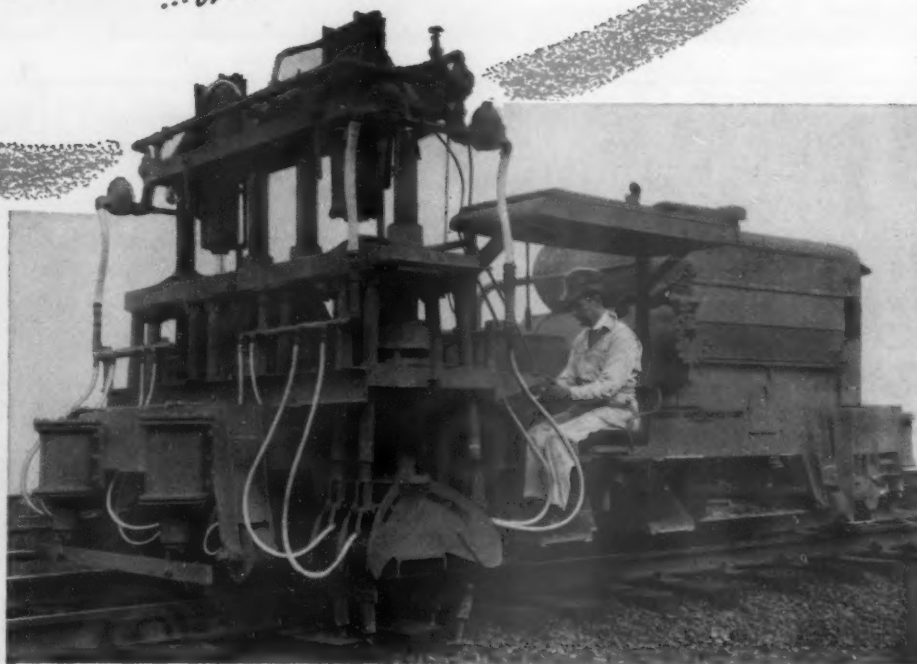
## McWILLIAMS BALLAST DISTRIBUTOR

This machine places ballast in the desired quantity in exactly the proper place for tie tamping. In service it replaces a crew of from 30 to 40 men forking ballast, doing the job faster, better and more economically. The track ahead of the Ballast Distributor always is clear for renewing and replacing ties. Machine will also dress shoulder and intertrack.

**McWilliams Equipment**  
*Does the job BETTER  
...with fewer men!*

## McWILLIAMS TIE TAMPER

Operating by controlled pressure, this unit compacts the ballast firmly under the rail without crushing the ballast. It operates at from 450 to 550 feet per hour of perfectly tamped track, and is the most versatile and efficient tie tamper ever developed.



**SEE BOTH  
MACHINES**



VISIT OUR BOOTHS 79, 80, 81, 99, 100, 101.

# Railway Maintenance Corporation

PITTSBURGH 30, PA.

DESIGNERS AND MANUFACTURERS OF: McWILLIAMS MOLE AND SUPER MOLE . . . McWILLIAMS TIE TAMPER, CRIB CLEANER AND BALLAST DISTRIBUTOR . . . R. M. C. RAIL JOINT PACKING



## Financial

### Erie Rebuffed in Move To Boost D&H Rental

Division 4 of the I.C.C. has dismissed the Erie's application for modification of a trackage agreement under which the D&H uses 34.5 miles of Erie line between Jefferson Junction, Pa., and Carbondale (*Railway Age*, February 16, page 54). The dismissal was "for want of jurisdiction."

Use of the Erie segment by the D&H is covered by a 100-year trackage agreement dating from January 1, 1898. The agreement provides, among other things, that the "basis of compensation . . . may be readjusted . . . at the expiration of each term of ten years . . ." The D&H in 1948 declined to pay increased rental, and the Erie subsequently asked the I.C.C. to find that public convenience and necessity "permit and require" abandonment of the trackage rights unless D&H agreed to pay "just and reasonable" rental. In case the D&H agreed to a rental increase, the I.C.C. was asked to authorize the higher trackage charges.

D&H filed a motion for dismissal of the Erie application, and the I.C.C. (Division 4) did so. The division ruled that changes in the Interstate Commerce Act in 1940 (Section 5) authorized the commission to revise trackage agreements approved under Section 5(2).

Powers conferred by this section do not, Division 4 said, give the commission authority to interfere with "a validly existing contract entered into previous to the enactment of that legislation" unless such agreement has "lawfully terminated."

As to the Erie request for abandonment of D&H operation over its line, Division 4 said any certificate it might grant would be "permissive not mandatory." It said there was "no actual intention" on the part of the Erie that the D&H actually abandon operation, and it concluded that Congress did not intend that I.C.C. abandonment jurisdiction be invoked "under such circumstances and for such purposes" as sought by the Erie.

Basic question in the case, Division 4 continued, is whether, as a matter of law, the rental provision of the 1898 agreement has been terminated. This, it said, is a matter for the courts to decide. It said it would be "inappropriate" to express views for the court's guidance, and on this note dismissed the Erie's application.

### Railroads Increase Private Placement Financing

Railroads obtained an increased share of financing by life insurance companies and other institutional investors in 1952, with dollar volume of \$267,208,000, or 5.31 per cent of the total of all financing of this kind, according to the 1953 Yearbook of Private Placement Finance.

ing, published by E. V. Hale & Co., Chicago private placement specialists. Financing by railroads listed in the yearbook for the previous year amounted to \$177,164,000, or 3.48 per cent of the total.

Total private placement financing in 1952 was \$5,032,803,000, compared with \$5,085,238,000 the year before, the yearbook states, with 1,124 issues in 1952 against 1,256 in 1951. Industrial corporations accounted for \$3,249,588,000, or 65 per cent of the total, as compared with \$3,564,000,000, or 70 per cent, in 1951.

Eighty-four per cent of the railroads' private placements—40 out of 44 issues, aggregating \$223,377,000— took the form of conditional sale agreements, but there were also several privately placed bond issues. These included: Atlantic Coast Line—\$22,000,000 of 4.25 per cent, 20-year, general mortgage bonds, series B, placed with 17 institutions; Illinois Central—\$13,000,000 of 4.25 per cent, 30-year, consolidated mortgage bonds, series D, placed with seven life insurance companies; Fruit Growers Express Company—\$6,495,000 of 3.25 per cent 15-year equipment trust certificates placed with a group of institutional investors; and Chesapeake & Ohio—a \$2,336,000 3 per cent first preferred ship mortgage, placed with a single life insurance company.

Fifteen life insurance companies accounted for 94 per cent of the private placement financing of railroads in 1952. Leading, by a wide margin, was the Metropolitan Life Insurance Com-



### THE OLD STAYS . . .

STARTED AS A PIONEERING EXPERIMENT in heavy-duty electric traction in 1903, the Lackawanna & Wyoming Valley (popularly known as the "Laurel Line") ended its once heavy and frequent passenger service between Scranton, Pa., and Carbondale, 19 miles, early this year. Hence, 12 cars built new between 1924 and 1928, (right) have just been sold to a Carbondale junk dealer.

But three freight locomotives of ancient vintage are still going strong, handling carload ship-



### THE NEWER PASSES

ments interlined with all roads in the Wyoming valley area. No. 402 (left), built in 1906, is a mate of No. 401, which was built by Westinghouse in 1896 as an experimental unit to demonstrate the feasibility of electric traction for heavy freight service, and which is still in service.

Heavily interested in the Laurel Line was George Westinghouse, whose engineering firm built and ran it during its initial period of operation. *Railway Age* described the road, at its opening, as "a particularly high grade/interurban property . . . which . . . presents all the features of a first-class steam road."



**MODERN  
ANNEALING  
FACILITIES-**

## For Cold Finished Alloy Bars

These modern furnaces insure uniform annealed quality, which is another important reason why Youngstown Cold Finished Alloy Bars are so satisfactory.

Their machinability and cold working properties are superior. Tolerances, metallurgical characteristics and all phases of the manufacture of Youngstown Cold Finished Alloy Bars are sub-

jected to rigid quality control of a single integrated organization—from mining of the ore to shipment of the finished product.

Youngstown Cold Finished Alloy and Carbon Steel Bars are furnished in standard shapes and sizes, in both coils and straight lengths. For further information, phone or write our nearest District Sales Office.



# Youngstown

**COLD FINISHED CARBON  
AND ALLOY STEEL BARS**

**THE YOUNGSTOWN SHEET AND TUBE COMPANY**

General Offices: Youngstown, Ohio - Export Office: 500 Fifth Avenue, New York 36, N. Y.  
PIPE AND TUBULAR PRODUCTS - CONDUIT - BARS - RODS - COLD FINISHED CARBON AND ALLOY BARS -  
SHEETS - PLATES - WIRE - ELECTROLYTIC TIN PLATE - COKE TIN PLATE - RAILROAD TRACK SPIKES

*Manufacturers of  
Carbon, Alloy and Tool Steel*



pany, with 15 issues totaling \$104,701,000. The Equitable Life Assurance Society of the United States stood second, with seven issues totaling \$27,759,000, and the John Hancock Mutual Life Insurance Company third, with six issues aggregating \$15,729,000. The Northwestern Mutual Life Insurance Company was the only other institution with more than \$10,000,000 1952 placements in the railroad field.

**Boston & Providence.—Reorganization.**—An I.C.C. examiner has again recommended that this road be "reorganized" through the sale of its properties to the New York, New Haven & Hartford. Examiner Harvey H. Wilkinson proposed that the New Haven pay \$9,026,095 for the B&P, the property of which includes a main line of railroad between Providence, R. I., and Boston. The New Haven would pay \$3,051,842 in cash, and the remainder in securities. The cash payment represents interest and dividends on the securities since January 1, 1940—the date on which the first B&P reorganization plan was scheduled to become effective.

This latest proposal for reorganizing the B&P differs from earlier plans by the addition of the cash factor to the amount which the New Haven would pay for the B&P. All claims and counter-claims between the New Haven and B&P, meanwhile, would be "washed out" by Examiner Wilkinson.

B&P debenture holders would receive "full satisfaction" for their claims under this plan. Holders of the 33,291 outstanding shares of B&P stock would receive "slightly over \$100 per share," depending upon the current market value of the New Haven securities.

The New Haven securities to be issued in payment for the B&P properties would include \$3,039,213 of first and refunding bonds, \$1,467,520 of income bonds, and \$1,467,520 of preferred stock.

**Port Terminal Railroad Association (Houston, Tex.).—Operation.**—The I.C.C. has authorized this association, representing six railroad systems, to operate over three more rail segments owned by the Harris County Houston Ship Channel Navigation District at Houston. The segments, totaling 4.4 miles, serve several major industries.

The I.C.C. authorized the Houston Belt and Terminal and the Sugar Land to join other carriers in using rail lines operated by the association. Also approved was a proposed increase in rental paid by the association to the navigation district. And the commission authorized members of the association to pool demurrage revenue—"to provide that industries served by association may execute and operate under single instead of multiple average demurrage agreements."

The six railroad systems represented by the association are the Chicago, Rock Island & Pacific; Fort Worth & Denver; Gulf, Colorado & Santa Fe;

Missouri-Kansas-Texas of Texas; Texas & New Orleans and Missouri Pacific.

**United of Havana.—To Be Acquired by Cuban Government.**—The Cuban cabinet has approved a draft law authorizing a public-debt bond issue of not more than \$20,000,000 to acquire and operate the British-owned United of Havana. The British company was reported to have been asking about \$15,000,000 for the railroad, which is essential for transporting Cuba's sugar crop. The advisory council that drew up the draft law suggested that the bonds, bearing interest at not more than 4½ per cent, should have a maturity of not less than 10 and not more than 50 years.

**Wisconsin Central.—Reorganization.**—The U.S. District Court in Minnesota has been advised by the I.C.C. of the results of balloting by security holders on the WC reorganization plan. Eight classes of security holders were held by the court to be eligible to vote, and the I.C.C. conducted the balloting. With the exception of preferred stock holders, a majority of those voting in each class approved the plan. In the case of the preferred shareholders, 62.75 per cent of those voting were opposed to the plan.

The reorganization plan, approved by the I.C.C. in March 1952, provides for capitalization of \$58,947,900. The Canadian Pacific and Minneapolis, St. Paul & Sault Ste. Marie would emerge with control of the reorganized property.

## Investment Publications

[The surveys listed herein are for the most part prepared by financial houses for the information of their customers. Knowing that many such surveys contain valuable information, *Railway Age* lists them as a service to its readers, but assumes no responsibility for facts or opinions which they may contain bearing upon the attractiveness of specific securities.]

**Calvin Bullock**, One Wall st., New York 5.

*Whither the Railroads.* Perspective, July 15.

**W. E. Burnet & Co.**, 11 Wall st., New York 5.

*Current Position of Railroad Securities.* August 6.

**McMaster Hutchinson & Co.**, 105 South LaSalle st., Chicago 3.

*Chicago & North Western Railway Company.* July 22.

**Paine, Webber, Jackson & Curtis**, 25 Broad st., New York 4.

*Railroad Review.* August 3.

**R. W. Pressprich & Co.**, 48 Wall st., New York 5.

*Railroad Equipment Debt Maturities vs. Depreciation Charges.* July 21.

**Smith, Barney & Co.**, 14 Wall st., New York 5.

*International-Great Northern Railroad Company.* Railroad Bulletin No. 141, August 19.

*Railroad Earnings.* Railroad Bulletin No. 138, August 4.

*Railroad Stock Comparison.* Railroad Bulletin No. 139, August 6.

*Railroad Stock Exchange Suggestions.* Railroad Bulletins Nos. 136, 137, 140, July 30, July 31, August 13.

**Vilas & Hickey**, 49 Wall st., New York 5.

*Denver & Rio Grande Western.* July 31.

## Securities

**Colorado & Southern.—Common Stock Dividend Declared.**—Directors of the C&S have declared the first dividend on its common stock since 1930, with a payment of \$1, payable December 31 to holders of record December 18. The 1930 payment on common amounted to \$3 and was also paid on December 31.

## Applications

**DENVER & RIO GRANDE WESTERN.—Stock Dividend.**—This road has asked the I.C.C. for authority to issue 333,245 shares of common stock to pay the 50 per cent stock dividend voted by directors of the road on August 24 (*Railway Age*, August 31, page 23). Based on present distribution of D&RGW stock, 176,274 new shares would be used for payment of the dividend. The remaining 156,971 shares would be used when and if holders of preferred shares elect to convert into common stock. Maximum increase in capitalization from this stock dividend plus conversion of preferred shares will not exceed \$33,324,500, the road told the I.C.C.

**WABASH.—To assume liability for \$2,820,000 of series E equipment trust certificates, to finance in part 10 diesel units and 240 freight cars costing an estimated \$3,525,164.**

	Description and Builder	Estimated Unit Cost
6	1,500-hp. road-switchers (Electro-Motive Division, General Motors Corporation) .....	\$169,227
4	1,200-hp. switchers (General Motors) .....	108,545
200	50-ton box cars (American Car & Foundry Co.) .....	8,481
40	70-ton covered hopper cars (Pullman-Standard Car Manufacturing Company) .....	9,486

The certificates, dated September 1, would mature in 15 annual installments of \$188,000 each, beginning September 1, 1954. They would be sold by competitive bidding, with interest rate to be set by such bids.

## Authorization

**GULF, MOBILE & OHIO.—To assume liability for \$4,500,000 of series G equipment trust certificates, to finance in part 750 freight cars costing an estimated \$5,665,000 (*Railway Age*, August 3, page 23). Division 4 approved sale of the certificates for 99.1083 with interest at 3½ per cent—the bid of Salomon Bros. & Hutzler and three associates—which will make the average annual cost of the proceeds to the road approximately 3.27 per cent. The certificates, dated September 1, will mature in 30 semiannual installments of \$150,000 each, beginning March 1, 1954. They were reoffered to the public at prices yielding from 2.75 to 3.3 per cent, according to maturity.**

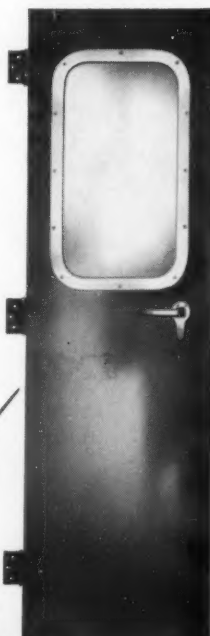
**LOUISVILLE & NASHVILLE.—To assume liability for \$7,650,000 of series M equipment trust certificates, the first installment of a proposed \$9,645,000 issue. Proceeds from sale of the certificates will be used to help finance the cost of 1,750 new freight cars costing an estimated \$12,075,000 (*Railway Age*, August 10 page 17). Division 4 approved sale of the certificates for 99.53 with interest at 3¼ per cent—the bid of Halsey Stuart & Co. and 12 associates—which will make the average annual cost of the proceeds to the road approximately 3.35 per cent. The certificates, dated August 15, will mature in 15 annual installments of \$5,100,000 each beginning August 15, 1954. They were reoffered to the public at prices yielding from 2.9 to 3.35 per cent, according to maturity.**

**MISSISSIPPI EXPORT RAILROAD.—Stock Dividend.**—Division 4 of the I.C.C. authorized this road to issue 3,608 shares of common stock, par \$100, for distribution among present stock. (Continued on page 115)

you show good judgment when you specify **MORTON**  
hollow metal **DOORS**



Passenger Car  
Vestibule  
Side Door



Locomotive  
Cab  
Doors

**Anti-Pinch Shields**

These simple closures prevent injury caused by catching hands between hinge-edge of closing door and jamb. They are easily attached and do not detract from attractive appearance or efficient door operation.



**MAKERS OF** OPEN-GRIP RUNNING BOARDS AND BRAKE STEPS • KASS SAFETY TREAD • VESTIBULE DIAPHRAGMS AND CURTAINS • METAL DOORS • STEEL FLOORING ... AND A WIDE LINE OF PRODUCTS FOR RAILROAD USE

...ANY SIZE OR STYLE

...ANY METAL

...ANY SPECIFICATIONS

...ANY USE

Whenever you are in the market for any type of passenger train hollow metal doors, think *first* of Morton. Old-timers in the railroad field have seen Morton Hollow Metal Doors stand up throughout many years of rugged service. They know that, by any standard, it's just plain good judgment to "specify Morton."

✓ **Experience**—Morton has earned its unchallenged reputation for leadership over a period of 40 years. Today, as always, we refuse to compromise with quality. Our key mechanics have been on the job with us for many years—their skill and integrity are built into every door built in our plant.

✓ **Proved Design**—Morton Doors are designed and fabricated to assure exact dimensions as specified. Their design provides *extra strength without extra weight*—a distinct advantage. Interior surfaces are painted in two operations; this makes them highly weather-resistant under all service conditions.

✓ **Doors to Suit Your Needs**—Passenger train car doors—diesel locomotive cab doors—we are in a position to fabricate them all; we can supply sizes from the smallest locker door to the largest baggage car door! Specify your own metal—aluminum, mild steel, stainless steel—and we'll make the doors you want. Hardware and glass provided if specified.

✓ **Cost You Less in the Long Run**—Initial costs of Morton Doors are moderate, but that's not the only cost advantage! Replacement and maintenance costs are lower in the long run, thanks to the unexcelled quality which is built into every door we produce.

**MORTON**  
**MANUFACTURING COMPANY**

5125 West Lake Street, Chicago 44, Illinois





CAR BUILDERS TO AN

# Hang the Expense!



When maintenance expenses threaten earnings, it's time for a change!

Judicious timing of the change (to new, more economical freight cars) can make considerable difference to your end-of-the-year earnings.

All of which makes an intriguing *on the record* point about Q.C.f. freight cars.

Facts prove that they retain high earning power longer. Why? Because Q.C.f. engineers *know* on-the-job operating conditions... build in extra strength where it's needed most... in weldments, during fabrication and assembly.

Let Q.C.f. help you 'hang high maintenance costs'. Get the latest facts about Q.C.f. freight car design and maintenance today. Your nearby Q.C.f. Representative can give you some real eye openers! American Car and Foundry Company, New York • Chicago • St. Louis • Philadelphia • Washington • Cleveland • San Francisco

TO AMERICA'S RAILROADS **Q.C.f.**



# New Savings in Time and Money for Railroads!...

## Spring Packing Corporation

announces

### SP-1000

**DIESEL ENGINE  
OIL SEAL**

Here's an easy to use, brush-on Diesel engine gasket seal that positively ends oil leaks and seepage — minimizes personnel and fire hazards caused by oil leakage.



SP-1000 means vastly increased engine availability — saves unnecessary down-time for shop work. Now standard on many major railroads, SP-1000 can be applied either in the shop as a preventive measure, or during turn-around when inspection reveals seepage or leaks. Simply wire brush and clean the joint, brush SP-1000 along the exposed edge of the gasket to be sealed and allow to cure — the whole job takes only 4 hours! Economical too — only two pints will seal all the gasketed joints on a 12 cylinder Diesel engine.

### SP-1005

**ELECTRISEAL**

This is a permanently flexible plastic coating with a dielectric strength several times that called for in railroad service. Electriseal is unaffected by moisture or contaminated atmosphere—positively prevents the formation of oxides and corrosion on electrical connections.

SP-1005 is quickly molded onto the electrical connection by forming with the hand. It has high adhesive characteristics...will not crack, oxidize, or fall off even when subject to vibration and weather conditions. Single layer application—easy to use—removable, simply peel off. Non-irritating to the skin.



### SP-1005-OR ELECTRISEAL

Specially developed for applications where oil leakage or drippage is present. No loss in dielectric value when submerged in oil for prolonged periods.

**WRITE TODAY FOR COMPLETE INFORMATION!**

OVER



35 YEARS

**SPRING PACKING CORPORATION • 332 SOUTH MICHIGAN AVE. • CHICAGO 4, ILLINOIS**

(Continued from page 110)

holders on the basis of four new shares for each share held. Net book value of present shares is approximately \$696; and after the new shares are issued the net book value will approximate \$139 a share. Mississippi Export is a 42-mile line between Evanston, Miss., and Pascagoula.

## Dividends Declared

**BANGOR & AROOSTOOK.**—5% preferred, \$1.25, quarterly, payable October 1 to holders of record September 4.

**BEECH CREEK.**—50¢, quarterly, payable October 1 to holders of record September 9.

**BOSTON & ALBANY.**—\$2, payable September 30 to holders of record August 31.

**CHICAGO SOUTH SHORE & SOUTH BEND.**—25¢, quarterly, payable September 15 to holders of record September 5.

**COLORADO & SOUTHERN.**—\$1, resumed, payable December 31 to holders of record December 18.

**DELAWARE & HUDSON.**—\$1, quarterly, payable September 28 to holders of record September 11.

**MINNEAPOLIS & ST. LOUIS.**—30¢, quarterly, increased, and 20¢, extra, both payable September 15 to holders of record September 8.

**PITTSBURGH, FORT WAYNE & CHICAGO.**—\$1.75, quarterly, payable October 1 to holders of record September 10.

**READING.**—4%, 2nd preferred, 50¢, quarterly, payable October 8 to holders of record September 7.

**SEABOARD AIR LINE.**—new common, 80¢, quarterly, payable September 25 to holders of record September 11.

**UNION PACIFIC.**—\$1.25, quarterly; 4% preferred, \$1, semiannual, both payable October 1 to holders of record September 8.

## Security Price Averages

	Sept. 1	Prev. Week	Last Year
Average price of 20 representative railway stocks	59.12	61.32	64.66
Average price of 20 representative railway bonds	89.63	90.16	92.90

## Railway Officers

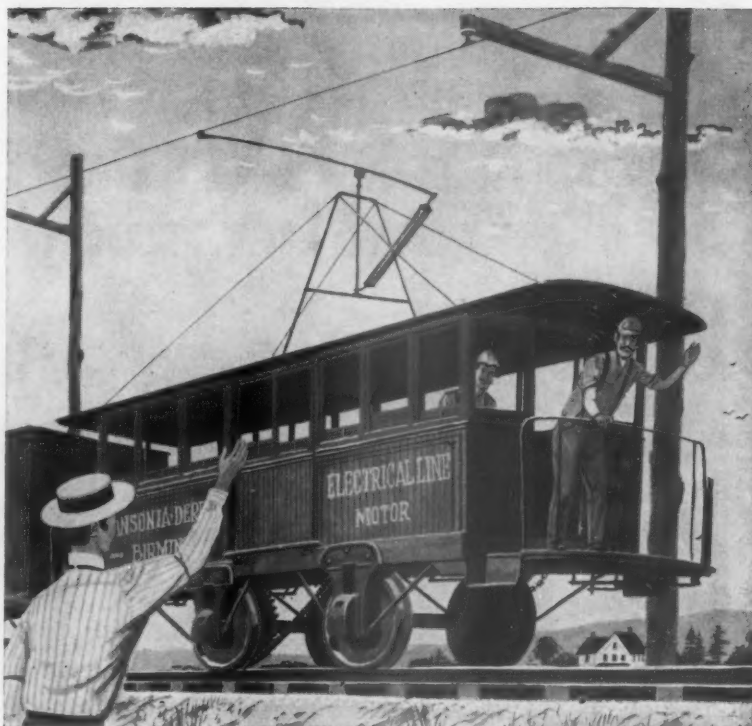
### EXECUTIVE

**W. H. Hillis**, senior vice-president of the Rock Island, at Chicago is retiring September 15. Mr. Hillis began his railroad career in 1905 as a shop helper for the Burlington and attained the position of superintendent of con-



W. H. Hillis

struction before he joined the Rock Island in 1936 as engineer of maintenance of way. In 1942 he became operating officer and in 1948, operating



When this was the first  
and only chain-drive  
electric locomotive

It's 1888 . . . and here's the first ELECTRIC freight locomotive to be used in this country. Salute the Ansonia, Derby and Birmingham Line!

Railroads were pushing ahead, then as now. Out on the line, this snappy, chain-driven job needed plenty in the way of poles, trolley wire, guys and cross arms.

Naturally, today's high-speed freight — and passenger — lines make these early needs seem meager.

Yet, today, via 109 Graybar offices and warehouses, railroad men have at their instant call stocks of hundreds of different pole-line hardware items . . . items designed to meet the specific needs of the nation's railroads. There are Graybar Railroad Representatives to lend a hand on any order to see that the best possible answer to every need is found and promptly shipped.

For poles, crossarms, pole-line hardware, tools, or any other outside construction materials, it pays to write one order, and mark it VIA GRAYBAR. Graybar Electric Company, Inc. Executive offices: Graybar Building, 420 Lexington Avenue, New York 17, N. Y. 304-209

100,000 electrical items  
are distributed  
THROUGHOUT THE NATION . . .

via  
Graybar

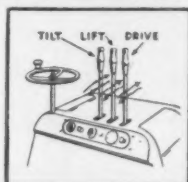


OFFICES AND WAREHOUSES IN OVER 100 PRINCIPAL CITIES



# ONLY MOBILIFT STAND-UP FORK LIFT TRUCKS

*Give You*  
**LEV-R-MATIC DRIVE**



- No Gears to Shift.
- Speeds All Movements.



- MOBILIFT MOBILITY**
- 360° Steering — ZERO Inner Turning Radius
  - Excels in Close Quarters



- MOBILIFT STAND-UPS**
- Ample size platform.
  - On and Off in Seconds.
  - All Around Visibility.



Only MOBILIFT Stand-Up type Fork Lift Trucks give you Lev-R-Matic push-pull controls for forward-back, elevating, tilting...THERE ARE NO GEARS TO SHIFT!

Only MOBILIFTS give you MOBILIFT agility and quickness with their compact design, short over-all length, 360° steering and ZERO inner turning

radius. They excel in congested areas.

Only MOBILIFTS give you perfect Stand-Up models—for more work, faster work, less operating expenses.

To these plus advantages add MOBILIFT air-cooled 3-cylinder engine's reliable power and easy accessibility for minimum service and repair...The answer is obvious:

**YOU'LL ACCOMPLISH MORE, WORK FASTER, EARN MORE WITH  
MOBILIFT FORK LIFT TRUCKS. Write for complete information.**



## MOBILIFT CORPORATION

835 S. E. MAIN ST., PORTLAND 14, OREGON

2317 W. 18th, CHICAGO • 790 Patterson Ave., E. RUTHERFORD, N. J.

1113 Spring St. N. W., ATLANTA • 2724 Taylor St., DALLAS

2730 San Pablo Ave., BERKELEY

vice-president. He was elected senior vice-president in 1951.

Anson G. Smith, who has been appointed assistant to vice-president, Central departments, of the RAILWAY EXPRESS AGENCY at Chicago (*Railway Age*, June 8), began his express career



Anson G. Smith

in 1910 at Logansport, Ind. He has been, subsequently, supervisor of organization, and superintendent, successively, of the Southern Ohio, Cincinnati, and St. Louis divisions.

### FINANCIAL, LEGAL & ACCOUNTING

**J. Gordon Watson**, assistant secretary of the PENNSYLVANIA at Philadelphia, has retired after more than 50 years of service.

### OPERATING

**James E. Dooley**, special agent of the NEW YORK CENTRAL at Syracuse, N.Y., has been appointed general transportation inspector at New York.

**J. H. Blake**, trainmaster of the SANTA FE at Carlsbad, N.M., has been appointed acting superintendent at Newton, Kan., succeeding **M. M. Killen**, on leave.

**G. H. Needham** has been appointed trainmaster of the MISSOURI PACIFIC at North Little Rock, Ark., succeeding **D. J. Burke**, assigned to other duties.

### TRAFFIC

As reported in *Railway Age* August 17, **Edward C. Ennis** has been appointed general freight agent of the DELAWARE, LACKAWANNA & WESTERN at Buffalo. Mr. Ennis entered Lackawanna service at Hoboken, N.J., in 1923; became chief clerk in 1938; traveling freight agent in 1940; general agent in 1949; division freight agent in 1950, and general agent at Boston March 1, 1951.

**D. R. Gann** has been appointed general agent of the NEW YORK, CHI-

# A MODERN CONCEPT

for smoother freight movement

Introduced by  
Scullin

## THE *New* SCULLIN C-C TRUCK

CONSTANT  
C-C  
CONTROL

featuring CONSTANT CONTROL FOR  
LOWER L. D. I. RATIOS

See how the new C-C Truck's remarkably simple, compact, constant control assembly saves so much cost and wear as it controls both lateral and vertical motion. The C-C Truck functions so efficiently that it set a Lading Damage Index Ratio record of only .44 Vertical, only .43 Lateral in Official A.A.R. Road Tests!

Write for details and engineering data  
See the new C-C



NEW YORK  
CHICAGO  
BALTIMORE  
RICHMOND, VA.

# SCULLIN STEEL CO.

SAINT LOUIS 10, MISSOURI





## BROS *Sno-Meltr* Casts Snow or Melts it Instantly

Here's the dual-purpose unit that revolutionizes railroad yard snow handling! Patented feeder rakes of the Bros Rotary slash and shatter even the hardest packed snow. Twin rotors whip the disintegrated snow back into the melting chamber. From

a myriad of spray outlets, hot water blasts each snow particle . . . fastest melting you've ever seen! Rear section of tank unit collects the water, can take a load of 19,000 gallons before quick dumping. Entire unit mounts on 70-ton flat car.



Bros revolving casting chutes can be aimed together or separately in any direction, can cast snow 75 to 100 feet away. Special gathering wings increase plowing

width from 9' to 14'. They lift individually to clear platforms, etc. Scarifier cleans down to 3" below rail level. All controls are hydraulic. Write for full information.

*Bros Sno-Meltr dual-purpose units have been proved by use on the Great Northern and the Canadian Pacific railroads.*

**WM. BROS BOILER & MFG. CO.**  
RAILROAD SALES DEPARTMENT • MINNEAPOLIS 14, MINNESOTA

CAGO & ST. LOUIS (NICKEL PLATE) at Albany, N.Y., succeeding **J. D. Snearline**, who has been promoted to division freight agent at Fort Wayne, Ind., to replace **E. S. Bodie**, deceased.

**Harold J. Foster**, general passenger agent of the MAINE CENTRAL, has been promoted to passenger traffic manager, with headquarters as before at Portland, Me. **John P. Scully**, industrial, real estate and tax agent, has been appointed manager of the industrial, real estate and tax department at Portland. Mr. Foster, was born at Portland on September 21, 1897, studied business administration at Bos-



**Harold J. Foster**

ton University. He started his service with the MC in the auditor of freight receipts' office in June 1916. Mr. Foster has been general passenger agent since March 1947. He is also vice-president of the Maine Central Transportation Company, highway subsidiary.

Mr. Scully started his railroad service with the MC in 1914 as a rodman in the engineering department. He became industrial, real estate and tax agent in 1949.

**William F. McGrath**, rate analyst of the WESTERN PACIFIC at San Francisco, has been named assistant to traffic manager at Chicago.

**James H. Williams**, freight representative of the DELAWARE, LACKAWANNA & WESTERN at Buffalo, has been promoted to general agent at Houston Tex., succeeding **W. S. Wilcox**, whose transfer to Boston was reported in *Railway Age* August 17.

**A. W. Lange** and **F. C. AuBuchon** have been appointed general agent and industrial agent, respectively, of the MISSOURI PACIFIC. Mr. Lange succeeds **E. E. Roethemeier** at Chattanooga, while Mr. AuBuchon replaces **T. J. Timper**, who has retired, at St. Louis.

**Walter I. Knox**, district passenger agent of the CHESAPEAKE & OHIO at Columbus, Ohio, has been appointed assistant general passenger agent at Washington, D.C., succeeding **James B. Edmunds**, who has retired after



## One-man beauty treatment ... FROM GRIME TO SHINE IN 90 SECONDS!

From locomotive to dome-type cars... just one "beauty operator" and a Whiting Train Washer sends an entire train on its way in minutes... clean and bright. Cars may pass through a Whiting Washer at the rate of 90 feet per minute... an ordinarily hard-to-clean dome-type car in as little as 90 seconds!

From his station, the operator easily controls the entire cleaning operation... solution spraying, brushing, final washing and rinsing.

Spongy-soft, long-life brushes remove grime without injury to car finish. Sturdy brush holders, held automatically against the car sides, have an exclusive self-aligning mechanism to compensate for car tilt. Sectional brush design makes possible various arrangements to handle special shapes, such as indented windows. *To save washing time—cut washing cost, consult Whiting!*

### WHITING CORPORATION

15603 Lathrop Ave., Harvey, Illinois

#### OTHER WHITING RAILROAD PRODUCTS

Drop Tables • Electric Portable Jacks • Cross-Over Bridges  
Trambeam Overhead Handling Systems • Overhead Cranes



A complete brush unit with individual water spray. Can be used in a variety of standard combinations.







Fir plywood parts boxes and bins are low in cost, light-weight . . . easy to handle, hard to hurt

STRONG, light, durable fir plywood pays off in long-range economy for parts boxes, bins, tool chests, portable lockers.

They're easier to build with plywood. Fir plywood is real wood. Requires no special tools. Works easily, permits custom-planning to meet exact needs.

Plywood won't split, crack, dent, puncture. Resists wear and scuffing. Strong! Pound for pound, one of the strongest materials known. Factory-seasoned, never green. Panels are exact size, dimensionally stable. Find out how plywood can save you money. Write Douglas Fir Plywood Assn., Tacoma 2, Wn.

## Fir Plywood

Industry trademarks are your guide, guard and assurance of DFPA quality-tested plywood

Fir plywood is made in two types: 1. Interior-type for indoor or structural uses; 2. Exterior-type for uses exposed to water or weather; EXT-DFPA on panel edge means 100% waterproof glue. Grades within each type meet exact use-needs.

PlyScore is the economical unsanded construction grade of Interior-type. Use it for boxes, bins, subflooring, wall and roof sheathing.

EXT-DFPA



SPECIFY DFPA-INSPECTED PLYWOOD

more than 46 years of service. **Harold M. Wilson**, traveling passenger agent at St. Louis, has been appointed district passenger agent at Columbus, succeeding Mr. Knox.

**Herbert C. Well**, general freight agent of the ERIE, has been appointed assistant freight traffic manager, with headquarters as before at Chicago, succeeding **H. T. Sweeney**, who retired August 31, after 47 years of service. **Arthur E. Hartman** has been appointed chief of tariff bureau at Chicago, succeeding **Edward R. Burton**, who has been appointed assistant general freight agent at Chicago. **Jesse**

**H. Sisco**, assistant general freight agent, has been appointed general freight agent, with headquarters as before at New York. **Frank K. Noonburg**, chief of tariff bureau, has been appointed assistant general freight agent, also with headquarters as before at New York, succeeding **Thomas Gilpin**, promoted. **Russell M. Terhune** has been appointed chief of division bureau at New York, succeeding **Frank J. Nelson**, who has been named chief of tariff bureau there.

**W. D. Hinkle** has been appointed assistant general freight agent of the GULF, MOBILE & OHIO and **A. J.**

### EXECUTIVE POSITION OPEN AS

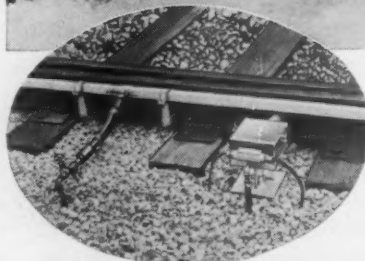
**General Manager**

**PACIFIC GREAT EASTERN  
RAILWAY COMPANY**

Applications will be received  
until 30th September, 1953

By Honourable W. A. C. Bennett,  
President,  
Pacific Great Eastern Railway Company,  
Parliament Buildings,  
Victoria, B. C.

## Snow Melting by Remote Control!



**White Remote Controls** with White gas burning switch heaters are providing dependable and superior **IN ACTUAL SERVICE.** Control unit in sealed off-

rail box, with igniter, tower indicator, automatic re-lighter. Complete cycle in a few seconds. Gas consumption adjustable for mild or heavy weather. Write for Circular 35-A

E. R. Mason, New York; John A. Roche, Chicago;  
Wm. H. Ziegler Co., Minneapolis

**White Manufacturing Company**

Elkhart 28, Indiana

Engel has been named district freight agent, both at Atlanta, Ga.

W. H. Boozer has been appointed general agent of the CHESAPEAKE & OHIO at Staunton, Va.

Marvin P. King, chief military clerk of the SOUTHERN, has been promoted to division passenger agent, with headquarters remaining at Washington, D.C., succeeding N. B. Ballinger, whose appointment as assistant general passenger agent at Washington was reported in *Railway Age* August 31.

J. G. Martin, general agent of the QUANAH, ACME & PACIFIC at New York, has been promoted to general eastern agent. R. L. Nixon, commercial agent, succeeds M. Martin. Frank H. Myers, commercial agent at Charlotte, N. C., has been promoted to general agent there.

As *Railway Age* reported July 6, Alvin T. Peterson, has been advanced to freight traffic manager—East of the Soo LINE at Chicago. Mr. Peterson entered railway service in 1912 with the Chicago Great Western. He joined the



— Alvin T. Peterson

Soo Line in 1915 as an operator. Subsequently, he served as clerk, agent, traveling freight agent, general agent, division freight agent and assistant general freight agent. In 1949 he became assistant freight traffic manager.

Walter M. Crehore, district freight agent of the SOUTHERN, has been promoted to division freight agent, with headquarters remaining at Greenville, S.C.

LeRoy H. Brooks, city passenger agent of the CANADIAN NATIONAL, has been appointed general agent, passenger department, with headquarters as before at New York, succeeding J. Frank Mongan, whose retirement was noted in *Railway Age* August 17.

R. H. Conrad, division freight and passenger agent of the MILWAUKEE at Mason City, Iowa, retired August 31 and has been succeeded by C. P.

## Will *Elesco* Replacement Parts continue to be available for Steam Locomotives?

The answer is  
*Yes*

An adequate supply of the following Elesco  
replacement parts is always maintained.

1. Superheaters – Pyrometers – Exhaust Steam Injectors – Steam Driers – Feedwater Heaters – Oil Separators – Dome and Front End Throttles.
2. Our service for the Remanufacture or replacement of your old superheater units continues.
3. Elesco Steam Generators and Parts.

Let us know of your needs for Stationary Boilers.

THE  
SUPERHEATER CO., Inc.

Division of  
COMBUSTION ENGINEERING INC.

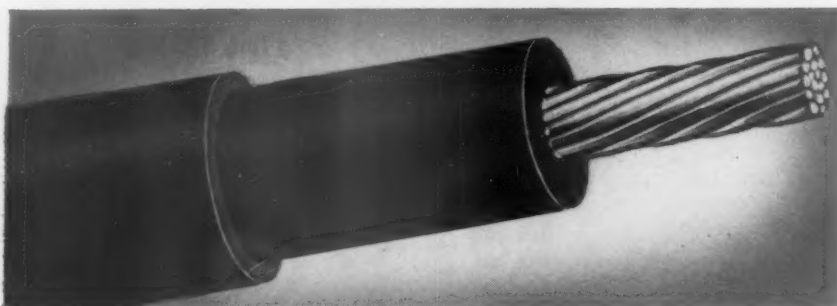
200 Madison Ave., NEW YORK  
Bankers Building, CHICAGO  
Montreal, Canada THE SUPERHEATER COMPANY, Ltd.



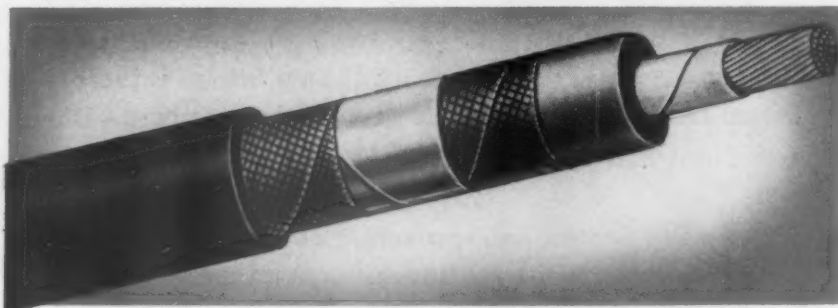


*For steady power distribution  
and general-purpose wiring  
railroads depend on*

# U. S. Grizzly<sup>®</sup> Butyl Insulated Cable



U. S. Grizzly non-metallic sheathed cable—Butyl insulation, Type RR-600 volts—80° C. dry locations, 75° C. wet locations.



U. S. Grizzly non-metallic sheathed cable—Butyl insulation, Type RR-8000 volts—Shielded—80° C. dry locations, 75° C. wet locations.



Write to address below for your free copies of General Catalog of U. S. Electrical Wires and Cables, plus booklet on Wires and Cables for the Railroad Industry.

United States Rubber Company is the only wire and cable manufacturer to grow its own natural rubber and to make its own synthetic rubber and its own plastics. That's why "U. S." is unexcelled at making wire and cable with superior insulation . . . using careful control at every step of the growth and manufacture. "U. S." makes all AAR *standard* types of electrical wires and cables, as well as *to your own specifications*. The line includes:

Royal Portable Cords and Cables  
• Signal and Communication Cables • Railroad Utility Cable  
• Track and Car Wire • Welding Cable • Twisted Pair Drop Wire  
• Locomotive Headlight and Train-Control Wire.

## UNITED STATES RUBBER COMPANY

Electrical Wire and Cable Department

ROCKEFELLER CENTER

NEW YORK 20, NEW YORK

**U.S. RUBBER**  
SERVING THROUGH SCIENCE

**Cassidy**, who transfers from Terre Haute, Ind. **Peter Braun**, traveling freight and passenger agent at San Francisco, replaces Mr. Cassidy.

**Don M. Beam**, general agent of the MONON at Hammond, Ind., retired September 1. **Joseph A. Martin** has been named to succeed him.

**Robert C. Murphy**, general agent—passenger department of the GREAT NORTHERN at Spokane, Wash., retired September 1 and has been succeeded by **Ray L. DuBois**, traveling passenger agent at that point.

**W. J. Riddell**, city freight and passenger agent of the NORTHERN PACIFIC at San Francisco, has been named general agent at Vancouver, B.C., succeeding **W. F. Caar**, retired.

### MECHANICAL

The following division master mechanics of the CANADIAN PACIFIC have been transferred: **A. Langdon**, Calgary to Saskatoon, succeeding **O. Cochrane**, resigned; **A. T. Reynolds**, Kenora to Calgary; **F. G. Noseworthy**, Winnipeg to Kenora; and **R. C. Thom**, Regina to Winnipeg. **J. Davies**, locomotive foreman at Kenora, has been promoted to replace Mr. Thom.

**J. A. Cannon**, general superintendent of motive power of the SPOKANE, PORTLAND & SEATTLE, has been named superintendent of motive power—western district of the NORTHERN PACIFIC at Seattle, Wash., succeeding **A. H. Fiedler**, retired. Mr. Cannon began his railway career in 1916 as a locomotive fireman for the NP. After advancing through a number of mechanical positions with that company, he was named general superintendent of motive power of the SP&S in 1950.

### PURCHASES & STORES

**M. L. Bishop** has been appointed purchasing agent of the PITTSBURGH & WEST VIRGINIA at Rook, Pa., succeeding **A. B. Cressler**, retired.

**L. S. Riha** has been appointed assistant purchasing agent of the CHICAGO & WESTERN INDIANA and the BELT OF CHICAGO at Chicago.

### ENGINEERING

**Sanders S. Ward**, resident engineer of the NORFOLK & WESTERN at Williamson, W. Va., has been transferred to Bluefield, W. Va., to succeed **R. S. Kerfoot**, who has retired after almost 48 years of service. **F. J. Bass, Jr.**, transitman, has been named resident engineer at Williamson.

**E. P. Peterson**, principal assistant engineer of the WESTERN PACIFIC, has been promoted to assistant chief engineer. Mr. Peterson began his railway

career with the Oregon-Washington Railroad & Navigation Co. (now Union Pacific); later became associated with the Northwestern Pacific; in 1921 entered WP service as office engineer, and has since been assistant engineer and principal assistant engineer.

### SPECIAL

**E. N. A. Sewell** has been appointed supervisor of safety and loss and damage prevention for the Saskatchewan district of the CANADIAN PACIFIC at Moose Jaw, succeeding **B. R. Beech**, who has retired after 40 years of service. Mr. Sewell has been assigned to special safety duties at Winnipeg since last June.

The Test department of the BALTIMORE & OHIO will hereafter be known as the Research department, and commonly referred to as the Research Laboratory. The title of **R. W. Seniff**, engineer tests, has been changed to manager research and that of **W. O. Towson**, assistant engineer tests, to assistant manager research.

**H. E. Hammer** has been appointed assistant publicity manager of the READING at Philadelphia (*Railway Age* August 24, page 86).

**L. L. LaFontaine** has been named personnel assistant of the GREAT NORTHERN at St. Paul, Minn., succeed-

ing **C. A. Pearson**, promoted elsewhere.

### OBITUARY

**Frank G. Campbell**, chief engineer of the ELGIN, JOLIET & EASTERN, died August 21 at Joliet, Ill.

**John Gaynor Walsh**, 62, vice-president (finance) of the SOUTHERN PACIFIC at New York, died August 28 at St. Francis hospital, San Francisco, of complications from a broken leg suffered in an accidental fall August 10. Mr. Walsh was born at Albany and attended Harvard University (1913). He entered railroad service in 1917 as assistant to vice-president in charge of financial matters of the Erie, becoming treasurer in June 1926 and secretary in May 1937. He had been vice-president (finance) of the SP at New York since December 1, 1938.

**Frank F. Frye**, retired assistant manager of the WESTERN WEIGHING & INSPECTION BUREAU at Chicago, died August 26 in Alexian Brothers Hospital in that city.

**R. H. Gaines**, retired engineer maintenance of way of the TEXAS & PACIFIC, died August 21.

**Ralph A. Klotz**, assistant to passenger traffic manager of the MILWAUKEE at Chicago, died August 30 in that city.



## ZIMMERMAN "STEEL-GRIP"

SPECIALLY DESIGNED TO FIT YOUR EXISTING AUTOMATIC WASHERS

- Every unit pretested for precision uniformity in size and weight.
- Long-lasting, better-washing Tampico Bristles.
- Rust proof metal strip.
- Satisfaction fully guaranteed.
- Free samples upon request.

If they're Zimmerman's, you can bank on them for longer life with top performance, backed by world-wide reputation for engineered dependability and value. "Steel Grip" is the choice of nationally-known railroads everywhere. That's because these brushes give greatest mileage with greatest economy and trouble-freedom.

Whatever your brush problem. Our engineers are at your service to help solve it. We invite your inquiries.

## ZIMMERMAN BRUSH WORKS

900 WEST LAKE STREET

CHICAGO 5, ILLINOIS



# Bump that assures positive results

*When fire strikes, seconds count... your fire extinguishers must be the right type and function properly from the very start... failure means serious losses.*



The growing popularity of the highly effective powdered dry chemical fire extinguishing agent may be hampered by a drawback... settling or packing can occur after a lapse of time. However, with C-O-TWO Dry Chemical Type Fire Extinguishers there's no chance of this happening.

The exclusive inverting and bumping design of C-O-TWO Dry Chemical Type Fire Extinguishers provides mechanical breakage of the dry chemical by shifting its position in the cylinder. This outstanding mechanical breakage, plus continuous inert gas pressured agitation or fluffing of the skillfully blended free flowing dry chemical, guarantee lasting, foolproof fire protection.

No other brand on the market today gives you this extra margin for positive results. Inverting and bump-

ing is only one of many unique design advantages that make C-O-TWO Dry Chemical Type Fire Extinguishers your best buy for killing flammable liquid and electrical fires, as well as surface fires involving ordinary combustible materials.

With C-O-TWO Dry Chemical Type Fire Extinguishers the heat-shielding dry chemical is a non-conducting, non-abrasive, non-toxic, finely pulverized powder compound... blankets fire instantly. Sizes range all the way from 4 to 150 pounds capacity... all fully approved by the Underwriters' Laboratories, Inc., Factory Mutual Laboratories and Government Bureaus.

Act now for complete free information on these top quality, sure-acting fire extinguishers. Remember fire doesn't wait... get the facts today!



MANUFACTURERS OF APPROVED FIRE PROTECTION EQUIPMENT

Squeeze-Grip Carbon Dioxide Type Fire Extinguishers  
Dry Chemical Type Fire Extinguishers  
Built-In High Pressure and Low Pressure Carbon Dioxide  
Type Fire Extinguishing Systems  
Built-In Smoke and Heat Fire Detecting Systems

**C-O-TWO FIRE EQUIPMENT COMPANY**  
NEWARK 1 • NEW JERSEY

C-O-TWO FIRE EQUIPMENT OF CANADA, LTD. • TORONTO 8 • ONTARIO

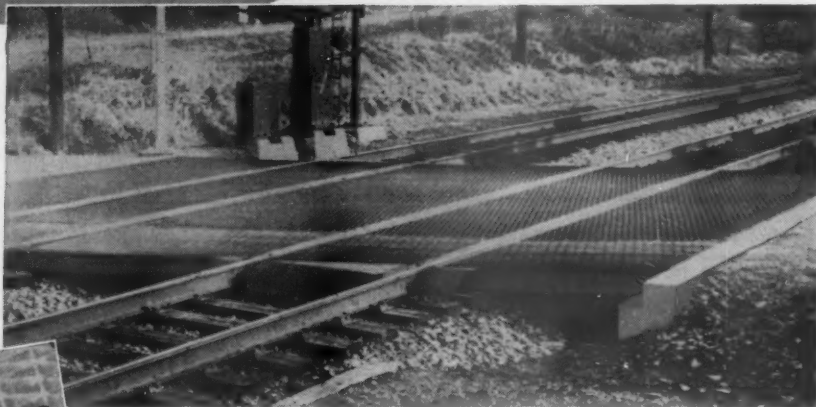
Sales and Service in the Principal Cities of United States and Canada

AFFILIATED WITH PYRENE MANUFACTURING COMPANY

# THE ORIGINAL *Condon* Steel Grating Railroad Crossing

**INSTALLED 5 YEARS AGO  
STILL AS GOOD AS NEW!**

- ▶ No Wear
- ▶ No Deterioration
- ▶ No Replacements
- ▶ No Maintenance



*Condon* CROSSINGS  
SAVE YOU MONEY!

This original installation—in the main line of the Erie Railroad at Canisteo, N. Y.—has now been in service for five years. It shows no wear or deterioration—has needed no replacements or repair—is still as good as when installed.

- Highly durable, non-skid steel surface
- No heavy equipment necessary for installation—can be handled by 2 men
- Sections can be removed for ballast-cleaning equipment or power tampers
- Sturdy and noiseless—constructed to H-20 Loading      ● Fits any rail section
- Drains freely, same as open track      ● Easily removable—and transferable
- No snow or ice removal problems      ● Curve installations at no extra cost

Showing at CHICAGO  
CONVENTION, September 14-17

See the working model of the CONDON CROSSING at the Morrison Railway Supply Corporation exhibit—Booth #6, TSA Chicago Convention September 14 to 17.

**MORRISON**  
RAILWAY SUPPLY CORP.

Rand Building  
BUFFALO 3, N. Y.  
1831 29th Avenue North  
BIRMINGHAM, ALA.  
332 S. Michigan Blvd.  
CHICAGO 4, ILL.



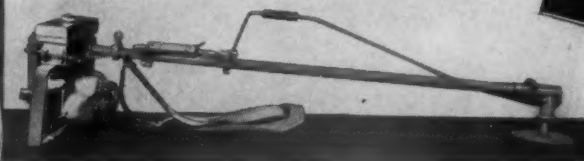
**This Booklet Shows You How Your Company Can  
SAVE 83% ON BRUSHCUTTING COSTS!**



with amazing, power-driven

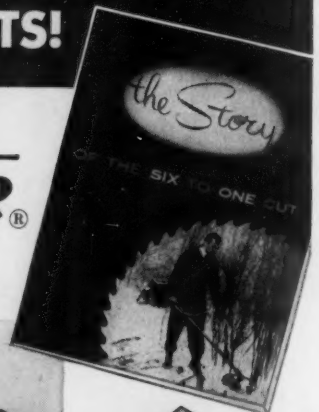
**BRUSHMASTER®**

THE SAFE, EFFICIENT METHOD OF  
MAINTAINING RIGHT-OF-WAY CLEARANCE



**ONE MAN ACCOMPLISHES THE WORK OF  
6 HAND-CUTTERS!**

Hundreds of American industries are showing big savings with the Brushmaster Saw. It cuts brush, from matted grass to saplings 4" in diameter or over, including vines, honeysuckle, thorns, etc. It's safe ... operator can not come into contact with saw blade! It's mobile ... goes anywhere a man can walk ... operates freely from right to left, close to ground or overhead! Vibration-free, clutch-controlled, positive drive.



**FREE!**

This colorful booklet tells how machine magic has made all previous methods of brushcutting obsolete. Send for it today.

**BRUSHMASTER SAW, INC.**  
91 EMERALD ST., KEENE, N. H.

Subsidiary of Harrington & Richardson, Inc., established 1871. — Manufactured and sold in Canada by H&R Arms Co., Ltd., Montreal, Canada



**Get your battery bulletin!**

It's hot off the press—C & D's latest Bulletin on Diesel-starting batteries. Here are complete details and information to make specifying and buying batteries easier. Write for your copy of Bulletin DL-576 today!



**BATTERIES, INC.**  
*of Conshohocken, Pa.*  
400 WASHINGTON STREET



**STAR MODEL 202-R**

Twin bulb lantern for spotting and signaling. One bulb set in triple-plated, highly polished reflector for spotting; other bulb produces flood of light for signaling. Positive-acting, waterproof switch operates both lights. Bulbs are protected by rigid, extra-heavy wire guard. Fiber bail is large enough to carry over arm. Lantern is light weight, waterproof, rust-resistant; takes standard bulbs, 6-volt battery.

WRITE FOR CATALOG NO. 52-3



**HEADLIGHT & LANTERN CO.**  
HONEOYE FALLS, N. Y.

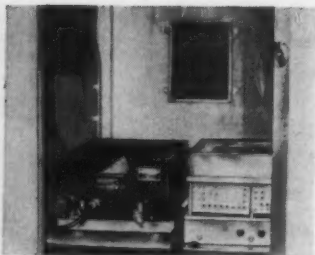
GUIDING THE WORLD'S RAILROADS SINCE 1889

these C-D installations are paying off!



#### RACK-MOUNTING

C-D vibrator converter installation showing rack-mounting with plug-in feature which simplifies wiring and facilitates installation.



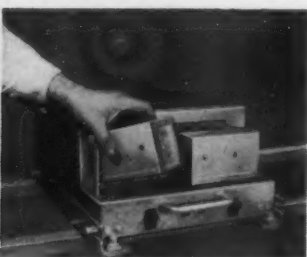
#### CONVENIENT SIGNAL

Pilot light changes from green to red to indicate operation on stand-by vibrator. No attention is required from the train crew.



#### SELF-SERVICING

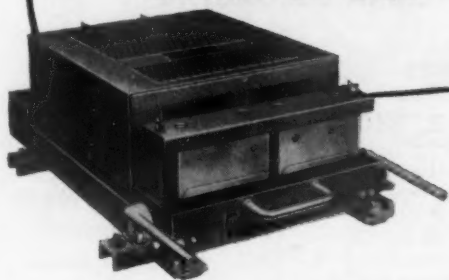
Patented C-D dual vibrator circuit with automatic switch-over, assures uninterrupted radio communications en route.



#### ONLY 2 MINUTES

This railroad finds that it takes only two minutes to plug in a fresh vibrator at the depot, during routine maintenance check-up.

## C-D vibrator converter



- Saves 60% on cost of initial installation
- Saves 50% each year on maintenance
- Services itself en route
- Field-proved and accepted by over 50 leading railroads

Write for our catalog, Cornell-Dubilier Electric Corp., Dept. RA93, Indianapolis Division, 2900 Columbia Ave., Indianapolis, Indiana. Affiliated Member A.A.R.



CONSISTENTLY **CORNELL-DUBILIER** DEPENDABLE

VIBRATOR CONVERTERS WITH RAILROAD DEPENDABILITY  
by the makers of world-famous C-D capacitors

PLANTS IN SOUTH PLAINFIELD, N. J.; NEW BEDFORD, WORCESTER AND CAMBRIDGE, MASS.; PROVIDENCE, R. I.; INDIANAPOLIS, IND.; FUGUAY SPRINGS, S. C.; AND SUBSIDIARY, THE RADIART CORP., CLEVELAND, OHIO  
Photos courtesy Bendix Radio, Motorola, Inc., Railway Signaling & Communications, Missouri Pacific R. R.

If you are interested in

**CLEANING  
BALLAST**

*on your  
Railroad*



**we stand on  
our record**

*Just Ask the  
Railroads  
That have used us!*



**OUR LATEST  
CUSTOMERS**



**FRANK SPENO RAILROAD BALLAST  
CLEANING CO. INC.**

306 North Cayuga Street

Ithaca, New York



# CLASSIFIED DEPARTMENT



Rates: \$5.00 an inch (1" x 1 1/2") per insertion; employment ads 10 cents a word, minimum \$2.00. Add \$1.00 for box address.

## RAILROAD EQUIPMENT—FOR SALE USED AS IS RECONDITIONED

### STANDARD GAUGE FREIGHT CARS

**BOX**, Steel Sheathed, 40-Ton

**BOX**, Double Sheathed, 50-Ton

**BOX**, Single Sheathed, 50-Ton

**FLAT**, 50-Ton Steel Underframe, 40'6" Long

**HOPPERS, ALL-STEEL, 70-TON, TRIPLE HOPPERS, CROSS DUMP**

**LONG, HEAVY-DUTY FLAT CARS**

40- & 50-Ton Capacity, Length 70' and 74'

70-Ton, 60' Long; Heavy Steel Fishbelly-Type Underframe

**STANDARD GAUGE AIR DUMP CARS**

Side Dump, 20-Yd., 40-Ton Lift Door

End Dump, 20-Yd., 50-Ton, Drop Door

**SIDE DUMP**, 30-Yd., 50-Ton, Drop Door

**GONDOLAS**, Composite or All-Steel, 50-Ton

**HOPPERS**, Twin, All-Steel, 50-Ton Cross Dump

**ORE HOPPERS**, All-Steel 50-Ton Heavy Duty

**TANK**, 3,000-Gallon, High Pressure

**TANK**, 8,000-Gallon, Coiled and Non-Coiled

**CABOOSE CARS**

Eight Wheel, Cupola Type

**OTHER EQUIPMENT**

Jordan Spreader

Locomotive Cranes

Overhead Cranes

Railroad Track Scales

**STANDARD GAUGE DIESEL-ELECTRIC ROAD SWITCHING LOCOMOTIVE**

300 H. P., 70-Ton, Type 0-4-4-0

**5 AIR-CONDITIONED, ALL-STEEL DINING CARS—NEW 1937**

**5 MOUNTAIN-TYPE STEAM LOCOMOTIVES, TYPE 4-8-2, EXCELLENT CONDITION**

Send us your inquiries

We Buy Freight Cars for Dismantling

Send us your offerings

REPAIR PARTS

For

All Types of  
Freight Cars

**IRON & STEEL PRODUCTS, INC.**

GENERAL OFFICE

13486 S. Brainard Ave., Chicago 33, Illinois

Phone: BAyport 1-3456

NEW YORK OFFICE

50-c Church St., New York 7, N. Y.

Phone: BEekman 3-8230

"ANYTHING containing IRON or STEEL"

STORAGE TANKS

6,000 Gallon

8,000 Gallon

10,000 Gallon

### Educational Services for RAILROAD MEN

Our New Service  
on  
Diesel Locomotive  
Operation  
is highly recommended  
for  
Engineers and Firemen

The Railway  
Educational Bureau  
Omaha 2, Nebraska

### POSITION WANTED

#### ENGINEER AVAILABLE

Want engineering job with responsibility or leading thereto. Experienced office and outside work maintenance and improvement.

Address Box 688, RAILWAY AGE,  
30 Church St., New York 7, N. Y.

### PROFESSIONAL DIRECTORY

Robert W. Hunt Company  
ENGINEERS

Inspection—Tests—Consultation  
All Railway Equipment  
Structures and Materials

General Office:  
175 W. Jackson Boulevard  
CHICAGO  
New York-Pittsburgh-St. Louis

KEEP BUYING BONDS

USED  
EQUIPMENT  
TO SELL?  
ADVERTISE  
IT IN THE  
CLASSIFIED  
DEPARTMENT

# CLASSIFIED DEPARTMENT

## NEW AND USED EQUIPMENT

### FOR SALE

#### Fourteen 70-ft. all-steel flat cars.

Wood decking and A B brakes. One private railroad car with living room, dining room, 3 bedrooms, and kitchen. All cars in first class condition. Will pass interchange. Inspection can be made at our Chicago yard.

Erman-Howell Division

#### LURIA STEEL AND TRADING CORP.

332 South Michigan Avenue Chicago 4, Illinois  
Phone WAbash 2-0250

### FOR SALE

#### NO. 3 BROWNING DIESEL LOCOMOTIVE CRANE

Capacity 27½ Tons  
Standard Gauge  
55 Ft. Boom  
Double Drums  
Hercules Diesel Engine  
Twin Disc Torque Converter  
Hydraulic Controls  
Converted to Diesel about 1945  
Write for photograph and price

#### Iron & Steel Products, Inc.

13486 S. Brainard Ave.,  
Chicago 33, Illinois  
Phone: BAyport 1-3456

### 1500 KW RECTIFIER

Mercury Arc. Ignitron 1500V.  
DC, Automatic AC 3/60/44,000,  
NEW in 1941, First Class Complete WESTINGHOUSE Sub Station.

VERY REASONABLE PRICE

#### S. M. DAVIS

510 LaSalle St. Louis 4, Mo.

### LOCOMOTIVES— SALE OR RENT

- 10 TON DAVENPORT GASOLINE.
- 20 TON WHITCOMB GASOLINE.
- 45 TON G.E. DIESEL ELECTRIC.
- 3 100 TON G.E. & WHITCOMB DIESEL ELECTRIC.

#### DARIEN,

60 E. 42nd St., N. Y. 17, N. Y.

### FOR SALE

44 ton General Electric diesel electric locomotives. 380 HP. New 1951.

50 yd. Differential drop door steel air dump cars. NEW.

30 yd. Magor drop door air dump cars built 1951. 24 available.

#### MISSISSIPPI VALLEY EQUIPMENT CO.

509 Locust St., St. Louis 1, Mo.

### FOR SALE

#### MODEL 30 BURRO LOCOMOTIVE CRANE

Standard Gauge  
7½ Tons Capacity  
33 ft. Boom  
Double Drums  
4 Cylinder Hercules Gasoline Engine  
Electric Starter

Good Condition.  
Priced low for quick sale.  
Location—southeastern state.

#### Iron & Steel Products, Inc.

13486 S. Brainard Ave.,  
Chicago 33, Illinois  
Phone: BAyport 1-3456

### FOR SALE

5—50 ton Covered Hopper Cars  
Interchange Condition

Address Box 698, Railway Ave  
30 Church St., New York 7, N.Y.

BUY  
DEFENSE  
BONDS  
REGULARLY

## POSITION OPEN

ASSISTANT RAILROAD SUPERINTENDENT, large copper company, Chile, South America. Graduate Civil or Mechanical Engineer, several years experience operation and maintenance railroads, responsible for supervision personnel. Must be capable designing structures, such as bridges and other pertinences relative to railroads. Should have good working knowledge Spanish or be able to pick up in short time. Man 35 to 40 years of age preferred. Starting salary for qualified applicant is about \$10,000. U.S.Cy. per year. 3-year contract, transportation both ways and salary while traveling paid by Company. In reply give complete details. Address Box 697, RAILWAY AGE, 30 Church St., New York 7, N.Y.

### SALESMAN WANTED

Wanted, salesman familiar with Maintenance of Way. Good income; known product. Reply

Box 810, RAILWAY AGE  
79 West Monroe Street  
Chicago 3, Illinois

### POSITION OPEN

Young CIVIL ENGINEERING GRADUATE with some experience in maintenance of track and track equipment for Railroad Department. Large copper company, Chile, South America. 3-year contract, transportation both ways and salary while traveling paid by Company. Good opportunities for advancement. In reply give complete details.

Address Box 696, RAILWAY AGE,  
30 Church St., New York 7, N.Y.

### WANTED

A qualified man for position of Master Mechanic to be placed in charge of the mechanical department of a short line railroad one hundred miles long. Located in the South. Eight diesel locomotives to maintain. Address Box 695, RAILWAY AGE, 30 Church St., New York 7, N. Y.

## CHICAGO TERRITORY OPEN

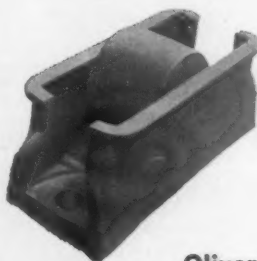
### Also Several Other Choice Territories Available

For railway equipment distributors. Must know operating personnel, be resourceful, have initiative. Wanted by Baker-Raulang Company and Baker-Lull Corp.—manufacturers of complete line of gasoline and electrical powered fork, platform and crane trucks; also pneumatic-tired loaders, SIDE loaders, etc. with capacities from 1000# to 30,000#.

Reply: Mgr. Railroad Sales

### BAKER - RAULANG COMPANY

1250 W. 80th Street, Cleveland 2, Ohio



## STUCKI SIDE BEARINGS

All Rolled Steel

### A. STUCKI CO.

Oliver Bldg., Pittsburgh, Pa.

Canadian Representative: The Holden Co. Ltd.

Montreal, Canada



# ADVERTISERS IN THIS ISSUE

Aeroquip Corporation .....	43	Magnus Metal Corporation, Subsidiary of National Lead Company .....	24, 25
Agency—Hopcraft Keller, Inc.		Agency—Richard & Company, Inc.	
American Car and Foundry Company .....	112, 113	Minneapolis-Honeywell Regulator Co. ....	44, 45
Agency—Hicks & Griest, Inc.		Agency—Foote, Cone & Belding	
American Locomotive Company .....	20, 21	Mississippi Valley Equipment Co. ....	129
Agency—G. M. Basford Company		Mobilift Corporation .....	116
American Steel Foundries .....	52, 53	Agency—Don Allen & Associates	
Agency—Erwin, Wasey and Company, Inc.		Morrison Railway Supply Corp. ....	125
Association of Manufacturers of Chilled Car Wheels .....	28, 29	Agency—Bowman & Block, Inc.	
Agency—The Schuyler Hopper Co.		Morton Manufacturing Company .....	111
Baker-Raulang Company .....	129	Agency—W. S. Kirkland Advertising	
Bethlehem Steel Company .....	3	National Bearing Division, American Brake Shoe Company .....	50, 51
Agency—Jones & Brakley, Inc.		Agency—Fuller & Smith & Ross, Inc.	
Bros Boiler & Mfg. Co., Wm. ....	118	National Malleable and Steel Castings Company ..	56, 57
Agency—The Alfred Colle Company		Agency—Palm & Patterson, Inc.	
Brushmaster Saw, Inc. ....	126	Nordberg Mfg. Co. ....	36, 37
Agency—Chambers & Wiswell, Inc.		Agency—Russell T. Gray, Inc.	
Buckeye Steel Castings Company, The .....	70	Oxweld Railroad Service Company Division of Union Carbide and Carbon Corporation ..	42
C & D Batteries, Inc. ....	126	Agency—J. M. Mathes, Inc.	
Agency—Richard A. Foley Advtg. Agency		Pressed Steel Car Company, Inc. ....	26, 27
C-O-Two Fire Equipment Company .....	124	Agency—Albert Frank-Gunther Law, Inc.	
Agency—G. M. Basford Company		Pullman-Standard Car Manufacturing Company ..	48, 49
Canadian Cardwell Co., Ltd. ....	78	Agency—Fuller & Smith & Ross, Inc.	
Agency—Van Auker, Ragland & Stevens		Railway Educational Bureau, The .....	128
Cardwell Westinghouse Co. ....	78	Railway Maintenance Corporation .....	107
Agency—Van Auker, Ragland & Stevens		Agency—Walker & Downing	
Caterpillar .....	103	Railway Steel-Spring Division, American Locomotive Company .....	10
Agency—N. W. Ayer & Son, Inc.		Agency—Hazard Advertising Company	
Chicago Railway Equipment Co. ....	46	Ramapo-Ajax Division, American Brake Shoe Company .....	74
Agency—W. S. Kirkland Advertising		Agency—L. W. Ramsey Company	
Chipman Chemical Company, Inc. ....	34	Remington Rand, Inc. ....	65
Agency—Paul M. Healy Advtg. Service		Agency—Leeford Advtg. Agency, Inc.	
Clark Equipment Company .....	61	Ryerson & Son, Inc., Joseph T. ....	130
Agency—Marsteller, Gebhardt & Reed, Inc.		Agency—Aubrey, Finlay, Marley & Hodgson, Inc.	
Cornell-Dubilier Electric Corporation ..	127	Safety Car Heating and Lighting Company, Inc., The ..	68
Agency—Friend, Reiss & McGlone Advertising		Agency—J. C. Bull, Inc.	
Darien .....	129	Scullin Steel Company .....	117
Differential Steel Car Company .....	62	Agency—Batz-Hodgson-Neuwochner Advertising Agency	
Agency—Coleman Todd & Associates		Speno Railroad Ballast Cleaning Co., Inc., Frank ..	127
Douglas Fir Plywood Association .....	120	Agency—Laur Advertising, Inc.	
Agency—The Condon Company, Inc.		Spring Packing Corporation .....	114
Dow Chemical Company, The .....	64	Agency—Wm. Hart Adler, Inc.	
Agency—MacManus, John & Adams, Inc.		Standard Oil Company (Indiana) .....	60
Eastman Kodak Company .....	105	Agency—McCann-Erickson, Inc.	
Agency—J. Walter Thompson Company		Standard Railway Equipment Manufacturing Company .....	73
Edgewater Steel Company .....	30	Agency—W. S. Kirkland Advertising	
Agency—Walker & Downing		Star Headlight & Lantern Co. ....	126
Electric Taper & Equipment Co. ....	9	Agency—Hutchins Advertising Company	
Agency—Stevens, Inc.		Stucki Co., A. ....	129
Esso Standard Oil Company .....	Back Cover	Superheater Company, The .....	121
Agency—McCann-Erickson, Inc.		Agency—G. M. Basford Company	
Fairbanks-Morse & Co. ....	54	Symington-Gould Corp., The .....	Inside Back Cover
Agency—The Buchen Company		Agency—Ed Wolff & Associates	
General American Transportation Corporation ..	32, 33	Texas Company, The .....	Inside Front Cover
Agency—Weiss & Geller, Inc.		Agency—Erwin, Wasey & Co., Inc.	
General Electric Company .....	20, 21	Timken Roller Bearing Company, The ...	Front Cover
Agency—G. M. Basford Company		Agency—Batten, Barton, Durstine & Osborn, Inc.	
General Railway Signal Company .....	66	Union Switch & Signal .....	4
Goodall Fabrics, Inc. ....	19	Agency—Batten, Barton, Durstine & Osborn, Inc.	
Agency—Ruthrauff & Ryan, Inc.		United States Rubber Company .....	122
Gould-National Batteries, Inc. ....	31	Agency—Fletcher D. Richards, Inc.	
Agency—Hutchins Advertising Company, Inc.		Waugh Equipment Company .....	23
Graybar Electric Co., Inc. ....	115	Waukesha Motor Company .....	38
Agency—G. M. Basford Company		Agency—Cramer-Krasselt Company	
Griffin Wheel Company .....	35	Westinghouse Air Brake Company .....	41
Agency—W. S. Kirkland Advertising		Agency—Batten, Barton, Durstine & Osborn, Inc.	
Grip Nut Company .....	47	Westinghouse Electric Corporation .....	55
Agency—Ross Llewellyn, Inc.		Agency—Fuller & Smith & Ross, Inc.	
Hunt Company, Robert W. ....	128	White Mfg. Co. ....	120
Hyatt Bearings Division, General Motors Corp. ..	6	Agency—Juhl Advertising Agency	
Agency—D. P. Brothers & Company, Inc.		Whiting Corporation .....	119
Hyster Company .....	40	Agency—Waldie & Briggs	
Agency—Foote, Cone & Belding		Wix Corporation .....	76
International Railway Car Co. ....	22	Agency—Humbert & Jones	
Agency—Bowman & Block, Inc.		Yale & Towne Manufacturing Co., The .....	59
International Steel Company .....	39	Agency—Ruthrauff & Ryan, Inc.	
Agency—W. S. Kirkland Advertising		Youngstown Sheet and Tube Company, The .....	109
Iron & Steel Products, Inc. ....	128, 129	Agency—The Griswold-Eshleman Co.	
Johns-Manville .....	58	Zimmerman Brush Works .....	123
Agency—J. Walter Thompson		Agency—E. Ross Humphrey & Assoc.	
Luria Steel and Trading Corp. ....	129		
MacLean-Fogg Lock Nut Company ..	63		
Agency—W. S. Kirkland Advertising			

**STEEL** in stock at  
**RYERSON**

Joseph T. Ryerson & Son, Inc., Plants: Chicago, Milwaukee, St. Louis, Cincinnati, Detroit, Cleveland, Buffalo, Boston, Philadelphia, Jersey City, Pittsburgh, Los Angeles, San Francisco, Seattle, Spokane

**BARs**—carbon & alloy, hot rolled & cold finished  
**STRUCTURALS**—channels, angles, beams, etc.

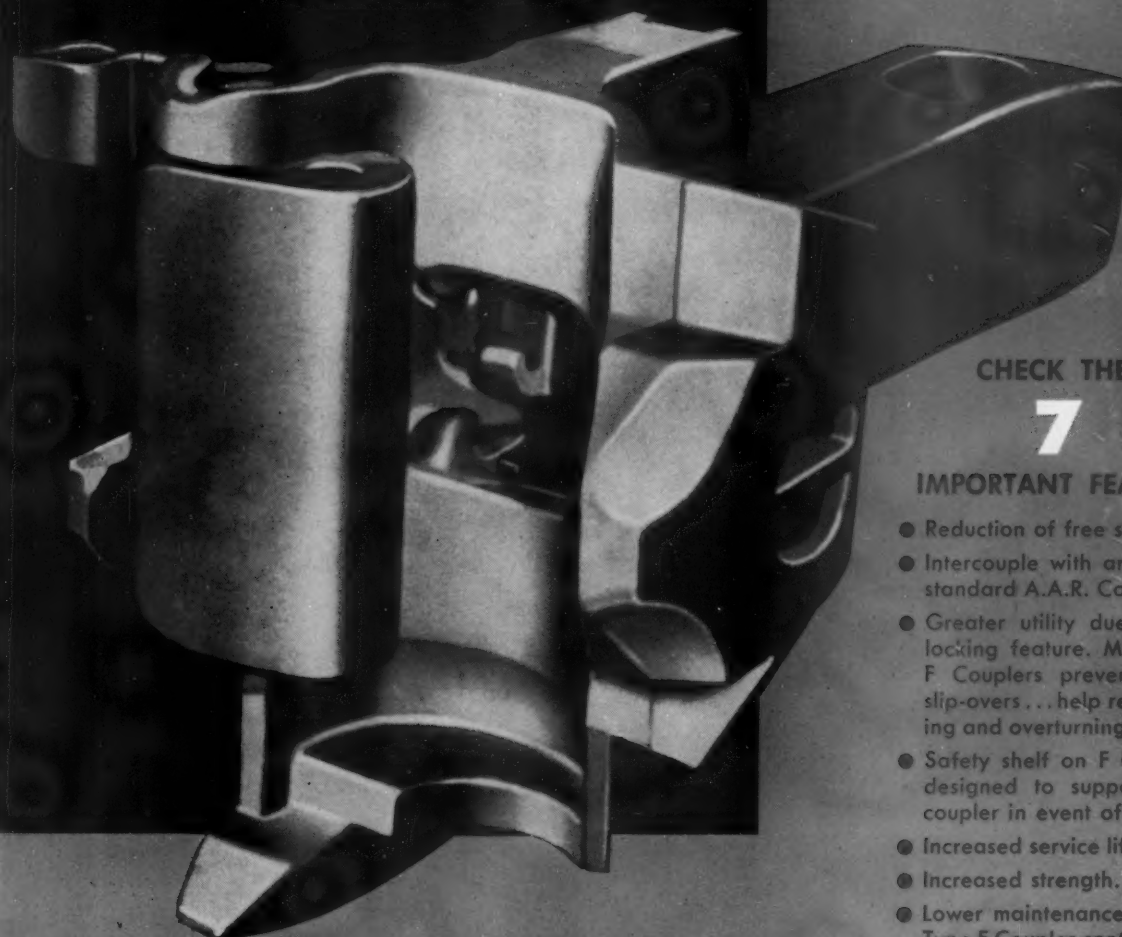
**PLATES**—sheared & U. M., inland & 4-Way Floor Plate  
**SHEETS**—hot & cold rolled, many types and coatings

**TUBING**—boiler & mechanical, seamless & welded  
**STAINLESS**—Alloy plates, sheets, bars, tubes

**For Improved Freight Service  
Specify**

**TYPE F  
INTERLOCKING COUPLER**

for { **LONGER LIFE  
LESS MAINTENANCE  
GREATER SAFETY**



**CHECK THESE**

**7**

**IMPORTANT FEATURES**

- Reduction of free slack.
- Intercouple with any existing standard A.A.R. Couplers.
- Greater utility due to interlocking feature. Mated Type F Couplers prevent vertical slip-overs... help resist climbing and overturning.
- Safety shelf on F Coupler is designed to support mated coupler in event of pull-out.
- Increased service life.
- Increased strength.
- Lower maintenance cost with Type F Coupler contours holding gage longer because of less vertical movement and less free slack.

DETAILS AVAILABLE IN CIRCULAR NO. 5550

**THE SYMINGTON-GOULD CORPORATION**

Works: DEPEW, NEW YORK

New York • Chicago • St. Louis • Boston • San Francisco • In Canada: ADANAC SUPPLIES, LTD., Montreal, Que.



INTERSTATE COMMERCE COMMISSION

WILLIAM BARTEL SECY

WASHINGTON 25 D C

A-11  
RB-2504

## LAB TESTED

—continuing research assures high quality  
... makes certain that Esso Railroad  
Products keep pace with latest en-  
gine design and developments.

## PROVED ON THE RUN

—constant on-the-job checks by Esso Sales  
Engineers assure the dependable per-  
formance of Esso Railroad Products.

# Esso

## ESSO DIESEL LUBRICATING OIL

A high-quality lubricant for real protection — Esso DIOL<sup>®</sup> RD is a diesel locomotive lubricating oil especially developed to railroad specifications. Produced only after years of field testing and research by engine designers and Esso scientists. Call on Esso for any fuel or lubricating problem.

ANOTHER

## DEPENDABLE ESSO RAILROAD PRODUCT

SOLD IN: Maine, N. H., Vt., Mass., R. I.,  
Conn., N. Y., Penn., Del., D. C., Va., W. Va.,  
N. C., S. C., Tenn., Ark., La.

ESSO STANDARD OIL COMPANY — Boston,  
Mass. — New York, N. Y. — Elizabeth, N. J. —  
Philadelphia, Pa. — Baltimore, Md. — Richmond,  
Va. — Charleston, W. Va. — Charlotte, N. C. —  
Columbia, S. C. — Memphis, Tenn. —  
New Orleans, La.

